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ABSTRACT

The study examined how 620 children, identified as handicapped while in preschool or kindergarten, had progressed 3 to 9 years later. The study addressed questions of effectiveness of identification procedures, outcomes of early intervention, handicapping condition and placement level, and educational history. Among results were: Identification procedures (in Montgomery County, Maryland) were generally effective in identifying the more seriously impaired children at younger ages; Identification procedures were less effective in identifying black handicapped children or handicapped children of lower socioeconomic status before the age of four; Consistent with the severity of the impairments of preschool-identified children, many still required special education in elementary school; Although fewer of the children identified in kindergarten continued to require special education services (reflecting their milder handicaps), the majority of those still being served required services as intensive or more intensive than those received in kindergarten. The report provides separate chapters on the study methodology and on special education placement and outcomes for children identified at either the preschool level or the kindergarten level. Five appendixes include a comparison of preschool and kindergarten sample characteristics, the derivation of the socioeconomic status variable, the continuum of special education services offered by Montgomery County, definitions of levels of service, and definitions of handicapping conditions. (DB)

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MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland

INITIAL SPECIAL EDUCATION PLACEMENT AND LONGITUDINAL OUTCOMES OF PRESCHOOL- AND KINDERGARTEN-IDENTIFIED HANDICAPPED CHILDREN

[Final Report]
by

Suzanne M. Raber
Joy A. Frechtling

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EC 191 747

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MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland

INITIAL SPECIAL EDUCATION PLACEMENT AND LONGITUDINAL OUTCOMES OF PRESCHOOL- AND KINDERGARTEN-IDENTIFIED HANDICAPPED CHILDREN

August 1985

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TABLE OF CONTENTS

	Page
Executive Summary	E-1
Chapter 1: Introduction	
Background	1
Objectives	1
Overview of Sample and Methodology	3
Chapter 2: Methodology	
Sample	4
Data Collection	4
Dependent and Independent Measures	5
Data Analysis	6
Definitional Issues	6
Assumptions and Limitations	8
Chapter 3: Special Education Placement and Outcomes of Preschool-identified Handicapped Children	
Summary	9
Preschool Sampling Strategy	9
Initial Special Education Identification and Placement	12
Special Education Outcomes in 1984	21
Summary and Discussion	35
Chapter 4: Special Education Placement and Outcomes of Kindergarten-identified Handicapped Children	
Summary	39
Kindergarten Sampling Strategy	39
Initial Special Education Identification and Placement	40
Special Education Outcomes in 1984	47
Summary and Discussion	61
Chapter 5: Discussion	63
References	69

Appendices

Appendix A: Comparisons of Preschool and Kindergarten Sample Characteristics
Appendix B: Derivation of Socioeconomic Status Variable
Appendix C: Montgomery County Public Schools Continuum of Special Education Services
Appendix D: Montgomery County Public Schools Level of Service Definitions
Appendix E: Montgomery County Public Schools Handicapping Condition Definitions

EXECUTIVE SUMMARY

INITIAL SPECIAL EDUCATION PLACEMENT AND LONGITUDINAL OUTCOMES OF PRESCHOOL- AND KINDERGARTEN-IDENTIFIED HANDICAPPED CHILDREN

STUDY DESCRIPTION

With the passage of the Education for All Handicapped Children Act (P.L. 94-142) in 1975, major changes in the identification and provision of services to handicapped children occurred. The law was enacted both to assure handicapped students access to appropriate and equitable educational services and to enhance these students' educational attainments. The broad requirements of P.L. 94-142 gave rise to a national "experiment" in early identification of students and the provision of special education services in the least restrictive environment appropriate. It was hoped, as with other early childhood efforts, that the early identification of at-risk or impaired children would lead to later deficits being eliminated or reduced.

Since the law's passage, many questions have been raised regarding the soundness of the educational theories on which it is based and the effects of program participation. The present study, The Preschool Retrospective Longitudinal Project, conducted by the Montgomery County Public Schools (MCPS), examined two issues which have received increasing attention: the efficacy of early identification of children with special needs and the effects of program participation. Furthermore, this study represented a unique opportunity to assemble detailed information about what actually happens to a large number of handicapped children who have access to a wide range of services from birth as they move through a public school system.

The overall purpose of this study was to look at how children, identified as handicapped while preschoolers and kindergarteners, had progressed in their school careers three to nine years after initial identification. The findings presented in this report address questions regarding early identification procedures and the outcomes of early intervention. In addition, because of local and national interest in the effects of selected demographic characteristics on special education placement and outcomes, the study also looked at possible interactions of race, sex, and family status characteristics with both identification and outcomes. Specifically, the study addressed the following questions:

1. Are early identification procedures operating effectively?

2. Does initial placement status differ for children from different demographic groups?

3. What are the outcomes of program participation?

4. Do the outcomes of program participation differ for children from different demographic groups?

The study objectives were addressed through the collection of retrospective data from the student records of preschool- and kindergarten-identified handicapped children. The sample included 620 children enrolled in MCPS during the 1983-84 school year who first received special education services through MCPS as preschoolers between 1974 and 1980 or as kindergarteners between 1979 and 1981. Children in the sample ranged from those with mild speech and language impairments first identified as five year olds to multiply handicapped children identified at birth.

Student records were summarized using a project-developed form to code information on educational placement history and demographic characteristics. With respect to placement histories, the study focused on handicapping condition and placement level. The study also examined educational histories as they relate to demographic factors. These included the child's age at entry into special education, sex, race, family size, and parental education and occupation. Parental occupation and education were used as indicators of family socioeconomic status (SES). Race and SES were treated as separate variables in the analyses and thus racial and socioeconomic comparisons are reported separately.

FINDINGS

EARLY IDENTIFICATION PROCEDURES

Early identification procedures appear to be operating effectively insofar as the more seriously impaired children were identified as handicapped before they reached kindergarten and at younger ages within the preschool years. Specifically, the composition of the preschool- and kindergarten-identified samples revealed the following:

- While the preschool sample included several children with severe impairments or with handicaps which should be readily apparent in very young children (e.g., hearing, visual, and orthopedic impairments), very few such youngsters were found in the kindergarten-identified sample.

- Of the few seriously impaired children entering MCPS special education as five year olds, most had actually been identified as handicapped before kindergarten, either by MCPS or elsewhere, but did not receive services <u>through MCPS</u> until they entered kindergarten.

- Within the preschool sample, children with the most serious impairments were identified at younger ages and were placed in more intensive services than those with milder deficits.

However, initial special education status differed with respect to the child's socioeconomic status and race. Specifically, the study found the following:

- Within the preschool sample, children from higher SES families and whites were more likely to be identified before age four, to be labeled as multihandicapped, and to be placed in self-contained preschool special education programs. Lower SES children and

blacks were often not identified until four years of age when they entered the Head Start Program, and subsequently were classified as speech impaired and received itinerant services.

- Among the kindergarten-identified handicapped children, white children were more likely to be labeled as speech impaired and placed in itinerant services, while blacks and children from lower SES families were more likely to be classified as learning disabled.

In sum, it appears that early identification procedures have been effective in identifying the more seriously impaired children in Montgomery County. These procedures may be less successful in locating less severely impaired black children and children from lower SES families. This possibility is explored further in the discussion of the results in Chapter 5.

THE OUTCOMES OF PRESCHOOL AND KINDERGARTEN INTERVENTION

One frequently used indicator of the effectiveness of early intervention is whether children require less intensive services or no services at all during their later school years. To examine this indicator, the study looked at services received by students in elementary school.

The analyses showed that consistent with the severity of the impairments of the preschool-identified children, many still required special education in elementary school. A relatively small percentage were no longer receiving special services. Specifically, the study found that:

- Eighty-seven percent of the preschoolers were still receiving some level of special education services in 1984, including 60 percent who were enrolled in self-contained special education.

- Among the preschool-identified children, 13 percent were no longer considered handicapped, 17 percent had moved to less restrictive environments, 53 percent remained in the same amount of service, and 17 percent required a greater amount of service four to nine years after identification.

- Those preschoolers most likely to require less intensive placements at the end of the follow-up period were initially identified as speech impaired rather than multihandicapped, began special education in lower levels of service, and were from higher SES families.

The findings for the kindergarten-identified children reflected their milder deficits, with a larger percentage no longer requiring services. Nonetheless, the majority of those still being served required services as intensive or more intensive than those received in kindergarten. Specifically, the study found that:

- Sixty-eight percent of the kindergarteners continued to receive some level of special education services in 1984; only 25 percent required self-contained settings.

- Within the kindergarten-identified sample, 32 percent were no

longer considered handicapped, 7 percent had moved to a less restrictive environment, 30 percent remained in the same amount of service, and 31 percent required a greater amount of service by third or fourth grade.

- Kindergarteners initially placed in lower levels of service, those labeled speech impaired, children from higher SES families, and girls tended to require less intense services in 1984 than the other children in the kindergarten sample.

In sum, the data on special education outcomes indicate that roughly one-third of those children who were identified as handicapped in preschool or kindergarten had moved to less restrictive environments or were no longer in special education in elementary school. These were primarily the more mildly impaired youngsters. Many of the more seriously impaired children in the sample remained in self-contained special education three to nine years after identification. In addition, preschoolers and kindergarteners from higher SES families were more likely to be in less intensive services several years after identification than their lower SES peers.

IMPLICATIONS

The primary objectives of this study were to examine the overall effectiveness of early identification and program participation for young handicapped children. With respect to these two objectives, the study results bear good news for early special educators and for MCPS. The study findings suggest that early identification procedures are operating effectively to locate seriously impaired children before they reach kindergarten. The more severely impaired youngsters and those with handicaps which are readily identifiable in infancy were identified before age five and at younger ages within the preschool years, while less serious handicaps emerged with increasing frequency in kindergarten. Regarding the efficacy of early intervention, the findings on 1984 special education placement status indicate that for roughly one-third of the children, particularly those with milder impairments, early intervention, either in preschool or kindergarten, has resulted in a reduced need for services three to nine years later.

Many of the the more seriously impaired youngsters remained in self-contained special education in 1984. Such results could be interpreted to mean that early intervention is effective with mildly impaired children but not with severely impaired or multihandicapped children. On the other hand, to measure the effectiveness of early intervention in terms of school age placements may be setting up false expectations for what such intervention can accomplish, particularly for children with more serious handicaps. In considering these findings in terms of MCPS policy, it should be emphasized that different expectations are appropriate for children with different handicaps and that some children may always require an intensive amount of service. This does not necessarily mean that intervention is ineffective for these children. Rather, it may be that getting out of special education or requiring less intensive services is not an appropriate index of the effectiveness of early intervention for these more severely impaired youngsters. Other outcomes, such as the impact of early intervention on the family and on the child's adaptive behavior, should also be considered.

The study also looked at whether initial placement status and the outcomes of program participation differed for children from different demographic groups. Small but statistically significant socioeconomic and racial differences were found in initial special education status. Specifically, children from higher SES families and whites were more likely to be identified before age four, classified as multihandicapped, and placed in self-contained preschool programs. Less severely impaired blacks and children from lower SES homes were often not identified until four or five years of age when they entered Head Start or kindergarten. Children identified in Head Start were labeled speech impaired and received itinerant services. Among the kindergarten-identified children, whites were more likely to be labeled speech impaired and placed in itinerant services, while blacks and children from lower SES families were more likely to be classified as learning disabled.

When the special education outcomes of these preschool- and kindergarten-identified children were examined several years later, students from lower SES families were more likely to be placed in more intensive levels of service in 1984 than their higher SES peers. These socioeconomic differences in elementary special education placements were found when initial differences in handicapping condition and placement level were controlled. This means that for children initially identified with the same handicapping condition and placed in the same level of service, those from lower SES families required more intensive placements in elementary school than higher SES children.

There are at least two possible explanations for the socioeconomic and racial differences found in initial and later special education placements. One possibility is that identification and placement procedures work differently for students from different SES and racial groups. Another explanation could be that these children were accurately identified and placed, but that the emergence and development of impairments are different for students from different SES and racial groups.

The data collected in this study do not permit firm conclusions to be drawn regarding the extent to which either of these explanations is true. And it is possible that both of these alternatives to some extent are responsible for the socioeconomic and racial differences found in initial and later special education status. Regardless of the explanation, from an MCPS policy perspective, these differences in special education outcomes for handicapped children from different socioeconomic backgrounds are of concern. It is recommended that the identification and placement process be studied further to determine whether changes need to be made to assure that children from all socioeconomic groups are appropriately served.

Chapter 1

INTRODUCTION

BACKGROUND

With the passage of the Education for All Handicapped Children Act (P.L. 94-142) in 1975, major changes in the identification and provision of services to handicapped children occurred. The law was enacted both to assure handicapped students access to appropriate and equitable educational services and to enhance these students' educational attainments. The broad requirements of P.L. 94-142 gave rise to a national "experiment" in early identification of students and the provision of special education services in the least restrictive environment appropriate. It was hoped, as with other early childhood efforts, that the early identification of at-risk or impaired children would lead to later deficits being eliminated or reduced.

Since the law's passage, many questions have been raised regarding the soundness of the educational theories on which it is based and the effects of program participation. The present study The Preschool Retrospective Longitudinal Project conducted by the Montgomery County Public Schools (MCPS) examined two issues which have received increasing attention: the efficacy of early identification of children with special needs and the effects of program participation.

This study represented a unique opportunity to assemble detailed information about what actually happens to a large number of young handicapped children in a public school system. Montgomery County serves, on an annual basis, over 500 preschool handicapped children with a broad range of special needs in 11 different programs. In addition, MCPS offers a continuum of services and has a state mandate for serving handicapped children from zero to five years of age. Finally, MCPS maintains a computerized pupil data base which facilitated the location of children who had previously received special education as preschoolers or kindergarteners. Because of these conditions, the study was able to examine what happens when young handicapped children have access to a wide range of services from birth.

OBJECTIVES

The overall purpose of this study was to look at how children, identified as handicapped while preschoolers and kindergarteners, had progressed in their school careers three to nine years after initial identification. The findings presented in this report address questions regarding early identification procedures and the outcomes of early intervention. In addition, because of local and national interest in the effects of selected demographic characteristics on special education placement and outcomes, the study also looked at possible interactions of race, sex, and family status characteristics with both identification and outcomes. Specifically, the study addressed the following questions:

1. Are early identification procedures operating effectively?

2. Does initial placement status differ for children from different demographic groups?

3. What are the outcomes of program participation?

4. Do the outcomes of program participation differ for children from different demographic groups?

Are early identification procedures operating effectively?

This research question was addressed in two ways. First, the study examined the composition of the sample to determine the extent to which children with severe impairments or with handicaps which should be identifiable at very young ages (e.g., visual, hearing, and orthopedic impairments) were first being identified as preschoolers and kindergarteners. Handicapping conditions which are readily apparent in very young children and very serious impairments should be identified prior to kindergarten. The extent to which severely impaired children and youngsters with these more easily identifiable handicaps emerge in kindergarten can indicate whether or not early identification procedures were operating effectively. Secondly, the study looked at the demographic characteristics which were related to the child's age at identification, initial handicap classification, and initial placement level to determine whether early identification and initial placement procedures operate differently for different groups in the county.

What are the outcomes of program participation?

The ideal research design for determining the outcomes of an intervention is the experimental control group design. In the case of early special education, this would mean identifying two similar groups of young handicapped children and providing services for one group while the other group remained "untreated." While a control group may be desirable for demonstrating that an outcome can be unequivocably linked to an intervention, identifying such a group would be unethical and also illegal in Maryland, which mandates services to young handicapped children under six years of age.

In the absence of a suitable comparison group, this study explored the effectiveness of early intervention in terms of the placement outcomes of young handicapped children who received preschool or kindergarten special education. Several recent studies of early intervention have defined impact using broad criteria such as special education placement or grade retention (Schweinhart and Weikart, 1980; Lazar and Darlington, 1982). In this tradition, the primary focus of the analyses was on global indicators of actual school performance such as subsequent need for special education, subsequent type and level of special education placement, and subsequent

handicap label.[1] These special education outcomes were examined in relation to the child's initial handicapping condition, age at identification, initial placement level, and demographic characteristics.

OVERVIEW OF SAMPLE AND METHODOLOGY

The study objectives were addressed through the collection of retrospective data from the student records of preschool- and kindergarten-identified handicapped children. The sample included 620 children enrolled in MCPS during the 1983-84 school year who first received special education services through MCPS as preschoolers between 1974 and 1980 or as kindergarteners between 1979 and 1981. Consequently, three to nine years of follow-up data were available on these children, depending on the year they entered service and their age at identification. Children in the sample varied considerably as to the type and severity of their handicaps, from those with mild speech and language impairments first identified in kindergarten to multiply handicapped children identified at birth.

Student records were summarized using a project-developed form to code information on educational placement history and demographic characteristics. With respect to placement histories, the study focused on handicapping condition and placement level. The study also examined educational histories as they relate to demographic factors. These included the child's age at entry into special education, sex, race, family size, and parental education and occupation. Parental occupation and education were used as indicators of family socioeconomic status.

Chapter 2 provides more information on the sample and methodology used to answer the research questions. The data which addresses these questions are presented separately for the preschool-identified and kindergarten-identified children. Chapter 3 contains the findings regarding initial placement and special education outcome for children who first received special education services as preschoolers. In Chapter 4, data are presented on the initial placement and special education outcomes of children first identified as handicapped in kindergarten. Chapter 5 offers a summary of the findings in relation to the research questions and their implications.

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1. Another approach to studying the effectiveness of early intervention is to compare the outcomes of children with similar handicaps who were identified at different ages. It was originally planned to compare the outcomes of the preschool- and kindergarten-identified children with similar handicaps to determine whether children with similar impairments who received special education in preschool fared better than those who did not start services until kindergarten; such a finding would support the effectiveness of earlier intervention. But the comparison of the preschool and kindergarten outcomes turned out to be an inappropriate research question for this sample because the two groups were so different at identification. Overall, the preschool-identified children were more seriously impaired than the kindergarten-identified youngsters (see Appendix A) and received different services because of differential program availability at the preschool and school age levels.

Chapter 2

METHODOLOGY

SAMPLE

The sample included 620 children enrolled in MCPS during the 1983-84 school year who received special education services through MCPS as preschoolers in 1978-79 or 1979-80 or who were identified as handicapped while in MCPS kindergarten in 1979-80 or 1980-81. Thus, the sample consisted of two cohorts each of preschool- and kindergarten-identified handicapped children. Three to nine years of follow-up data were available on these children, depending on the year in which they were identified and their age at initial special education placement. The four groups of handicapped children, their initial year of special education service, their age at initial service, and their age in 1983-84 follow:

Year Child First Received Special Education	Group (Age) at First Service	Child's Age at End of Follow-up (1983-84)
1978-79 (or earlier)	Preschool (Birth to four)	Five to nine
1979-80	Preschool (Birth to four)	Four to eight
1979-80	Kindergarten (Five)	Nine
1980-81	Kindergarten (Five)	Eight

The 1978-79 preschool group included any child who was receiving special education services as a preschooler in 1978-79; this meant that some of these children had started services as early as 1974-75. These children were included to provide a longer follow-up period where possible. Sample selection criteria for the preschool and kindergarten groups are detailed in Chapters 3 and 4.

DATA COLLECTION

The study examined the longitudinal outcomes of preschool- and kindergarten-identified handicapped children by looking at their educational placement histories from initial special education placement into elementary school retrospectively through the review of student records.

The school records of each child were summarized, using an extensive project-developed form to code information on educational placement history and demographic characteristics. To guarantee the validity and reliability of the record review data collected, firm decision rules for coding were developed and intercoder reliability was periodically monitored. Over the five-month data collection period, intercoder agreement between the two reviewers averaged 94 percent. Although student records were the primary source of placement history data, the MCPS computerized student data base Computerized Educational Data System (CEDS) was used to supply any information missing from the records or clarify any ambiguous information.

With respect to placement histories, the following information was recorded for each school year from special education entry through 1983-84: date of

enrollment; school; grade level; disability code(s), level of service, and program; related services; total hours per week of special education services; percentage of time in regular classroom and subjects in which mainstreamed, if any; other special help received; and areas of need.

The study also examined educational histories as they relate to demographic characteristics. These included the following child background information: sex, ethnicity/race, date of birth, citizenship, primary language, and birth order. Family background information was also coded and included the following: number of parents and siblings in the household, parental education and occupation, and change in the family structure since special education entry.

DEPENDENT AND INDEPENDENT MEASURES

To address the research questions on the effectiveness of early identification procedures, the study examined the initial special education status of preschool- and kindergarten-identified handicapped children and the demographic factors which were related to this initial status. In these analyses, the outcome measures were the following:

- Initial handicapping condition
- Initial placement level
- Age at initial special education service (only for preschoolers)

Initial special education status as summarized by these variables was examined in relation to the child's demographic characteristics which included the following independent measures:

- Sex
- Race
- Socioeconomic status (SES)
- Number of parents in the household
- Number of siblings

SES was based on the parents' occupation or educational level (see Appendix B for a detailed explanation of how this variable was derived). Parental education and occupation, number of parents in the household, and number of siblings were recorded when the child entered special education.

In addressing the study objectives regarding the effectiveness of early intervention, the study focused on the child's special education status in 1983-84. For these analyses, the outcome measures included:

- Level of service in March, 1984
- Handicapping condition in March, 1984
- Change in amount of service required from identification to March, 1984 (an indicator of movement to a less or more restrictive environment)

Special education status in 1983-84 as represented by these three variables was examined in relation to the child's initial special education status (initial handicap, initial placement level, and age at identification) and the child's demographic characteristics. In addition to the five demographic variables listed above, another demographic variable was included in the

analysis of 1983-84 special education status: change in family structure (e.g., death, divorce, or remarriage of parent(s)) from special education entry to 1983-84.

DATA ANALYSIS

To synthesize and summarize the large number of cases reviewed, two analytic approaches were employed. Descriptive statistics, which included means, frequencies, and cross tabulations, were used to aggregate the information across cases and to present the percentages of children who experienced different outcomes according to their demographic characteristics and initial special education status. Separate analyses were performed for each initial special education status variable and for each demographic variable. For example, the mean initial placement level for black and white children and the percentage of children identified as speech and language impaired who required different levels of service in 1983-84 were tabled. Those percentages derived from small samples (N) should be interpreted with caution.

There were significant intercorrelations among the two sets of independent measures, the demographic variables, and the initial special education status variables. Race, SES, number of parents, number of siblings, and change in family structure were significantly intercorrelated (r's ranged from .11 to .35, $p<.05$), as were age at identification, initial placement level, and initial handicap (r's from .35 to .66, $p<.001$). To determine the statistical significance and the independence of the relationship between any one of these variables and the outcome measure, a multiple regression technique was employed. Since there were very few American Indian (N=1), Asian (N=14), or Hispanic (N=23) children in the sample, only black and white children with a complete set of data on the demographic variables were included in each regression analysis. Regression provides information about the effect of a variable when controlling for all other variables, for example, the effect of race when SES is held constant. Thus, the regression analyses permitted the determination of which predictor variables, among a set of intercorrelated variables, were independently related to the outcome measure in question.

DEFINITIONAL ISSUES

Definitions regarding level of service and handicapping condition are key to the reader's understanding of this study.

Level of Service

Level of service is based on three factors:

- The setting in which the special education services are delivered (i.e., regular classroom, resource room, special classroom, special school, residential program, home, or hospital)
- The nature of the services (i.e., direct, consultative, monitoring, or assessment)
- The frequency of the services (number of hours per week)

MCPS offers a continuum of services, from Level 1 in which the child is served in a general education program with consultative service available to the teacher, to Level 6 in which the child receives 24-hour programming in a residential setting. In addition, Level 7 services are provided in the student's home or in a hospital when the child is unable to attend a special program and include home-based instruction for handicapped infants. The MCPS continuum of services is illustrated in Appendix C, and detailed level of service definitions are provided in Appendix D. This continuum and the respective service level definitions are based on the Maryland State Department of Education Special Education COMAR 13A.05.01.

This continuum of services represents a simplified way of quantifying the intensity of special education services that the child received each year. Initial placement level and level of service in 1984 were used as indicators of the intensity of services that a child required at identification and at the end of the follow-up period. The use of service level as an outcome measure was based on the assumption that it reflects the intensity of the child's special education needs. Consequently, level of service in 1984 reflected the effectiveness of preschool and kindergarten special education with a reduction in the child's intensity of services suggesting an effective intervention.

In addition, since level of service quantified intensity of service, it permitted the examination of changes in the amount of service a child received from identification in preschool or kindergarten to several years later in 1983-84. This change was used to reflect the child's movement to service provision in a less or more restrictive environment. For the purposes of these analyses, Levels 4 through 7 which all represent full-time special education were combined, with any student moving within these four levels counted as experiencing "no change in amount of service." Children initially placed in these levels had to move subsequently into Level 3 or less services to be considered in a less restrictive environment. This was done because of the limited range of services available to preschoolers; full-time special education services for preschoolers were generally only available at Level 5 or Level 7 during the years 1978-79 and 1979-80; few Level 4 school-based programs existed at this time. This also meant that Levels 5 and 7 preschoolers were likely to move to a lower level of service in elementary school merely because of the service levels available to them in preschool.

Handicapping Condition

Handicapping condition was included as both an independent and dependent measure because it reflects the nature of the child's general deficits and permitted the study of the their developmental course. The child's handicapping condition was based on the primary disability code recorded on the child's IEP (i.e., the first one listed) or when necessary, inferred from the child's program placement and services received (e.g., speech and language impaired for a child receiving only speech therapy). MCPS uses 11 handicapping classifications which are based on the Maryland State Department of Education Special Education COMAR 13A.05.01 (see Appendix E for these definitions). Children who were labeled with more than one disability code were classified according to their primary handicapping condition and were not included in the category "multihandicapped." Speech impaired and language impaired children are combined under the

classification "speech and language impaired" which is sometimes referred to as "speech impaired" in this report.

ASSUMPTIONS AND LIMITATIONS

Attrition

One methodological limitation of any longitudinal study is the problem of attrition, that is, the loss of cases over time. Attrition is a concern in follow-up research because the results for students who are no longer available for study may not be the same as those for the students that are. In determining the effects of attrition on a study's findings, the following two questions must be addressed:

1. How many of the subjects who originally received the program are available for study at the end of the follow-up period?

2. Is the sample of subjects available for study at the end of the follow-up period similar in composition to all subjects who received the program in question?

In locating the study sample, approximately 1,290 children were found who received special education services through MCPS during the years 1978-81 as preschoolers or kindergarteners. About 840 of these children or 65 percent continued to be enrolled in MCPS in 1983-84. Thus, the majority of the original sample was available for study.

It was not possible to determine the similarity in demographic and handicap composition between the original 1,290 children and the 840 children who were still enrolled in MCPS in 1983-84. Demographic data were only available on those children currently enrolled in MCPS in 1983-84. The handicapping conditions of the kindergarten-identified children were known before the sample was selected, but the preschool-identified children were located from program enrollment lists which did not always reflect the child's handicap and which were not always complete. To the extent that the sample of children differs from the sample originally served, the findings of the present study may be biased.

Chapter 3

SPECIAL EDUCATION PLACEMENT AND OUTCOMES OF PRESCHOOL-IDENTIFIED HANDICAPPED CHILDREN

SUMMARY

Most of the children identified at the preschool level fell into one of two groups: children identified from birth to three years old as either multihandicapped or speech impaired and placed in self-contained preschool programs, and youngsters identified as speech impaired four year olds and placed in itinerant speech therapy. SES and race were weak but statistically significant predictors of initial special education status. Children from lower SES families and blacks tended to be identified at the age of four, labeled speech impaired, and provided itinerant services; higher SES children and whites were more often labeled multihandicapped and placed in self-contained preschool programs before age four.

When educational status was examined four to nine years later, 30 percent of the preschoolers had moved to less restrictive environments, including 13 percent who were no longer considered handicapped; 53 percent maintained their level of service; 17 percent had moved to more restrictive environments; and 60 percent were in full-time special education programs. For the younger students, handicap classification in preschool directly predicted the child's handicap several years later. And, children identified as speech impaired were more likely to be in lower service levels than those initially identified as having other handicapping conditions. Children labeled learning disabled in 1984—a label not used before school age—were most likely to come from the older preschoolers originally identified as speech impaired by the Head Start Program.

Finally, SES was significantly but weakly related to 1984 special education status. Specifically, children from lower SES families were more likely to be in greater levels of service than their higher SES peers.

PRESCHOOL SAMPLING STRATEGY

The preschool sample consisted of 335 children enrolled in MCPS in 1983-84 who received special education services through MCPS as preschoolers in 1978-79 or 1979-80. More specifically, criteria for inclusion in the preschool sample were the following:

- Age criterion: That the child was from birth to four years of age when served in a preschool special education program in 1978-79 or 1979-80 (born 1974 to 1980)
- Special education criterion: That the child received Level 2 or above special education services through MCPS for the first time as a preschooler (ages birth through four)
- Enrollment criterion: That the child was continuously enrolled in MCPS from initial service through 1983-84 so that complete

placement information could be obtained for each intervening year.[1]

The names of children who were enrolled in preschool special education in either 1978-79 or 1979-80 were obtained from six MCPS preschool programs which served handicapped children and from the MCPS Placement Office which monitored the placement of handicapped children in four nonpublic preschool programs. Thus, the handicapped preschoolers in the sample attended several different preschool special education programs, both public and nonpublic, which serve children with a wide range of handicapping conditions.

The lists of preschoolers receiving services in 1978-79 included some children who had been served in previous years. Consequently, the sample included children who first were placed in special education in 1974-75 through 1979-80. Since all children were followed through 1983-84, the length of the follow-up period varied from four to nine years. Table 3.1 shows the number of children who started services at different ages and how many years they were followed. The majority of the preschool sample started services in 1978-79 or 1979-80 and thus were followed four to five years.

Once the student names had been obtained, the children were located by searching the MCPS computerized pupil data base for current enrollment status. Approximately 390 children who met the sample selection criteria were found. Since the study design required about 300 preschool-identified children, the sample was selected with an emphasis on including children with low-incidence handicaps (mental retardation; hearing, visual, emotional, or orthopedic impairments; and multiple handicaps) and children from programs for which the enrollment lists were incomplete. Children from the remaining programs were proportionately sampled until a sample of approximately 300 children was located. The final sample of 335 children[2] was not intended to represent the distribution of handicaps or the number of children served by different programs in the preschool-identified MCPS population but instead to include as many seriously impaired preschoolers as possible.

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1. Exceptions were made for 13 children who attended a preschool program, graduated from special education before age five, but remained in the county and then enrolled in MCPS at age five. These children could not maintain continuous MCPS enrollment because the school system does not offer preschool programs for nonhandicapped children (except Head Start which is for low-income families). However, these 13 children were included in the analyses.

2. Examination of student records revealed that some children, who were thought to have first received special education in kindergarten, had actually received service as preschoolers from a program that could not provide complete enrollment lists or from a county program with tuition paid for by their parents rather than MCPS. Consequently, the preschool sample is somewhat larger than the kindergarten sample.

TABLE 3.1

Number of Preschool Handicapped Children Identified at Different Ages and Length of Follow-up Period

Age Child Began Special Education	N	Number of Years Followed 4	5	6	7	8	9
Age 0-23 months	77	14	28	15	12	7	1
Age 24-47 months	135	49	39	34	13	0	0
Age 48-59 months	123	70	53	0	0	0	0
TOTALS	335	133	120	49	25	7	1

INITIAL SPECIAL EDUCATION IDENTIFICATION AND PLACEMENT

Handicapping Condition, Placement Level, and Age

Table 3.2 presents the number and percentage of preschoolers by their initial handicapping condition and level of service: 52 percent of the preschoolers were speech impaired, and 29 percent were multihandicapped. Despite the special effort made to include children with low-incidence handicaps, a relatively small percentage of the preschool sample was initially identified as mentally retarded, hearing impaired, visually impaired, emotionally impaired, or orthopedically impaired. This reflects the relative rarity of these disabilities in the general population. Data in Table 3.2 also indicate that 94 percent of the preschool sample began special education in either Level 5 or Level 2 services. It is important to note that of the 97 Level 2 speech impaired preschoolers, 78 received speech therapy as part of their Head Start program; while 19 attended speech therapy at a nonpublic program which serves MCPS children. This point will be returned to in the discussion of the follow-up data.

The mean age at initial placement was calculated for children with different initial handicapping conditions (Table 3.3). Children in the preschool sample began special education services at a mean age of 2.6 years. Orthopedically impaired, multihandicapped, visually impaired, and hearing impaired children began services at the youngest mean ages (2.1 years or less); while children initially identified as speech impaired, emotionally impaired, and learning disabled started services at older mean ages (3.4 to 4.0 years). Those identified earlier also tended to receive higher levels of service than those identified as older preschoolers. Table 3.4 shows that children identified as handicapped before age four were most frequently placed in Level 5 programs, while four year olds most often received itinerant services. The mean initial placement level was significantly ($p<.001$) higher for children under age two (5.2) than for two and three year olds (4.6) or four year olds (3.0).

In sum, there was a strong relationship between the child's initial handicap label, his/her age at identification, and initial placement level. Multihandicapped children tended to be identified at younger ages and placed in Level 5 programs. In general, children with low-incidence, serious impairments were also identified before the age four and placed in special schools. The bulk of the lesser impaired children was identified at the age of four, labeled as speech impaired, and given itinerant services through the Head Start Program.

TABLE 3.2

Initial Levels of Service for Preschool-identified Children with Different Handicapping Conditions

Initial Handicap	N	Initial Level of Service: Level 2	Level 3	Level 4	Level 5	Level 7	Total
		Percentage					
Mentally Retarded	4	0	0	0	100	0	1
Hearing Impaired	17	0	6	0	94	0	5
Speech Impaired	173	56	0	1	43	1	52
Visually Impaired	13	0	0	0	62	39	4
Emotionally Impaired	2	0	0	50	50	0	1
Orthopedically Impaired	16	19	0	0	81	0	5
Learning Disabled	1	0	0	100	0	0	0
Multihandicapped	97	2	0	0	89	9	29
Diagnostic[a]	12	8	0	17	75	0	4
TOTALS	335	31	0	2	63	5	101

a. Diagnostic is a label for children whose specific handicapping condition has not been determined at placement.

Note: Table entries are within row percentages except total percentage column. Some total row percentages do not equal 100 due to rounding.

TABLE 3.3

Mean Age at Initial Special Education Placement for
Preschool-identified Children with Different Handicapping Conditions

Initial Handicap	N	Mean Age at Initial Placement* (Years)
TOTAL SAMPLE	335	2.6
Mentally Retarded	4	3.3
Hearing Impaired	17	2.1
Speech/Language Impaired	173	3.4
Visually Impaired	13	1.8
Emotionally Impaired	2	3.5
Orthopedically Impaired	16	0.8
Learning Disabled	1	4.0
Multihandicapped	97	1.6
Diagnostic	12	3.3

* $p<.001$

TABLE 3.4

Initial Placement Levels for Preschool Handicapped Children Identified at Different Ages

Age Child Began Special Education	N	Initial Placement Level				
		Level 2	Level 3	Level 4	Level 5	Level 7
		Percentage				
Age 0-23 months	77	4	0	0	79	17
Age 24-47 months	135	13	1	2	84	2
Age 48-59 months	123	68	0	2	30	0
TOTALS	335	31	0	2	63	5

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

Relationships Between Age, Initial Placement Level, Initial Handicapping Condition, and Student Demographic Characteristics

Age. Table 3.5 presents the mean age at initial special education placement for the entire preschool sample and for four demographic comparisons: sex, race, SES, and number of parents in the household. SES and number of parents were determined at the time of the child's entry into special education.

Analyses show the following:

- Whites, children from higher SES families, and children with both parents in the home entered preschool special education at significantly younger mean ages than blacks, lower SES children, and children from single-parent homes ($p<.001$).

- Females also entered preschool special education at a younger mean age than males, but this difference did not quite reach statistical significance ($p=.08$).

A regression analysis was used to provide information about the independent effects of these demographic factors on the age at which the child was identified.[3] The demographic variables included sex, race, SES, number of parents in the household, and number of siblings. Siblings were counted at the child's special education entry. All black and white preschoolers with a complete set of data were included (N = 281).

Three variables emerged as making significant contributions to the amount of variance explained. A weighted combination of SES, race, and sex explained 9 percent of the variance in the child's age at special education placement. SES alone accounted for 6 percent of the variance, suggesting that when race was controlled SES was the stronger predictor of age at first service. Specifically:

- Regardless of race and number of parents in the home, children from higher SES families tended to enter preschool special education at younger ages than lower SES children.

- In addition, white children and females were more likely to begin preschool special education at younger ages than blacks and males.

- When SES and race were held constant, number of parents in the home was not related to the child's age at identification.

Initial Placement Level. The mean initial placement level was also calculated for several different demographic groups in the preschool sample (Table 3.6).

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3. SES, race, number of parents, and number of siblings were highly intercorrelated in the preschool sample (r's ranged from .11 to .32, $p<.05$), suggesting that the black families tended to be large, lower in SES, and single parent.

TABLE 3.5

Mean Age at Initial Special Education Placement for Different Groups of Preschool-identified Handicapped Children

	N	Mean Age at Initial Placement (Years)	Statistical Significance
TOTAL SAMPLE	335	2.6	
Males	222	2.7	NS(p=.08)
Females	113	2.4	
Whites	251	2.4	p<.001
Blacks	66[a]	3.4	
Low SES	61	3.1	
Middle SES	164	2.7	p<.001
High SES	72[b]	2.0	
Single Parent	59	3.2	p<.001
Both Parents	276	2.5	

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.

TABLE 3.6

Mean Initial Placement Level for Different Groups of Preschool-identified Handicapped Children

	N	Mean Initial Placement Level	Statistical Significance
TOTAL SAMPLE	335	4.1	
Males	222	4.1	NS
Females	113	4.3	
Whites	251	4.4	p<.001
Blacks	66[a]	3.1	
Low SES	61	3.4	
Middle SES	164	4.2	p<.001
High SES	72[b]	4.7	
Single Parent	59	3.7	p<.05
Both Parents	276	4.2	

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.

Analyses showed that although males and females started at roughly the same level of service, there were significant racial and SES differences in the mean initial placement level as well as differences between children from one- and two-parent households:

- White children, children from higher SES families, and children living with both parents tended to start special education services at more intense levels than blacks, lower SES children, and children from single-parent homes.

Regression analyses showed that a weighted combination of three factors--race, SES, and number of siblings--explained 14 percent of the variance in initial placement level, with race alone accounting for 9 percent and SES and number of siblings each adding 2-3 percent. Thus, when SES and the other demographic factors were controlled, race was the strongest predictor of initial placement level. Specifically:

- Regardless of differences in SES and number of parents, white children tended to be placed in higher level placements than black children.

- In addition, children from higher SES and smaller families were more likely to start in more intense levels of service than children from lower SES and larger families.

- When SES and race were held constant, number of parents in the household was not related to initial placement level.

Initial Handicapping Condition. Finally, the study looked at initial handicap for several different demographic groups in the preschool sample. The percentages of preschoolers who were identified as either speech impaired, multihandicapped, or having another handicap are presented in Table 3.7. It appears that some groups of children were more likely than others to be labeled speech impaired or multihandicapped as preschoolers. The differences were greatest for race, SES, and number of siblings:

- Black children, children from low SES homes and children from larger families were more likely to be classified as speech impaired.

- White children, children from high SES homes, and children from smaller families were more likely to be labeled as multihandicapped or as having a handicap other than speech impairment.

In predicting an initial classification of speech impaired, the regression analysis revealed that both SES and number of siblings significantly contributed to the variance; but SES was the stronger predictor. When all five demographic variables were controlled, SES accounted for 4 percent of the variance; and number of siblings accounted for an additional 2 percent. Specifically:

- When differences in demographic characteristics including race were controlled, children from lower SES homes and larger families were more likely to be identified as speech impaired than other children in the sample.

TABLE 3.7

Initial Handicapping Condition
for Different Groups of Preschool-identified Children

		Initial Handicapping Condition		
	N	Speech Impaired	Multi-handicapped	Other Handicap
		Percentage		
TOTAL SAMPLE	335	52	29	19
Males	222	55	27	19
Females	113	46	34	20
Whites	251	49	28	23
Blacks	66[a]	70	24	6
Low SES	61	69	21	10
Middle SES	164	54	23	23
High SES	72[b]	36	39	25
Single Parents	59	49	34	17
Both Parents	276	52	28	20
		Mean		
Number of Siblings	333[c]	1.7	1.2	1.1**

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.
c. Number of siblings was not available for two children.

** $p<.01$

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

In the regression analysis to predict an initial label of multihandicapped, only SES emerged as a significant predictor, explaining only 1 percent of the variance when the other demographic variables were controlled:

- Children from higher SES families were more likely to be identified as multihandicapped than children from lower SES families.

Summary

In sum, it appears that demographic factors were modest but consistent predictors of initial special education status, as a weighted combination of race, SES, and number of siblings explained, at best, 14 percent of the variance in initial placement level. The amount of explained variance was even smaller for the other initial special education status variables. SES was the most consistent demographic predictor of initial status. Race, number of siblings, and sex also explained a significant amount of the variance for some of the initial special education status variables: age at initial service, initial placement level, or initial handicap.

In interpreting these findings, it must be recognized that the weak but significant relationship between SES and the child's initial special education status may be a reflection of the large number of children in the sample who were first identified as speech impaired through the Head Start Program, a program serving only low-income families. In addition, the apparent effects of race may reflect the fact that the percentage of black children first receiving special education through Head Start (61%) was substantially higher than for the total preschool sample (24%). Taken together, these findings suggest two avenues for future inquiry: **First**, a close look needs to be taken at the identification procedures used by Head Start to make sure that they are appropriate, equitable, and comparable to those used by other diagnosticians; **second**, an analysis should be done of the systemwide procedures for early identification to determine whether low-income and/or minority families are being adequately served. This issue is discussed further in Chapter 5.

SPECIAL EDUCATION OUTCOMES IN 1984

A second objective of this study was to describe the special education status of these preschool-identified handicapped children in 1983-84, four to nine years after they started service. Two major categories of outcome variables were examined: level of service (including movement to less restrictive environments) and handicapping condition.

1984 Level of Service

Analysis of data on the 1984 service level of the students identified as preschoolers shows that 87 percent of the students who were identified as handicapped when they were preschoolers were still receiving special education services in 1984. Sixty percent of the preschool sample was in full-time special education (Levels 4, 5, or 6) several years after initial identification (Table 3.8).

TABLE 3.8

1984 Level of Service by Initial Placement Level
for Preschool-identified Handicapped Children

Initial Placement Level	N	1984 Level of Service: Not Handicapped	Levels 1 and 2	Level 3	Level 4	Levels 5 and 6
		Percentage				
2-Itinerant	103	21	24	13	19	22
3-Resource Room	1	0	100	0	0	0
4-Special Class	5	0	20	0	40	40
5-Special School	211	10	14	10	19	47
7-Home-based	15	0	7	7	0	87
TOTALS	335	13	17	10	19	41

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

Relationships were explored between the 1984 service level data and several characteristics of the sample at the time of initial placement. These characteristics are initial placement level, initial handicapping condition, age at initial placement, and demographics.

Initial Placement Level. Table 3.8 shows the relationships between initial and 1984 placement levels. These data suggest that preschoolers who began special education in lower levels of service fared better than children who started in higher level programs. Level 2 preschoolers were more likely no longer to be labeled handicapped (21%) than their Level 5 counterparts (10%). In contrast, preschoolers starting in Level 5 programs were more likely to be placed in Level 5 or 6 programs in 1984 (47%) than preschoolers initially placed in itinerant services (22%).

Initial Handicapping Condition. Table 3.9 shows the relationship between students' initial handicapping conditions and their 1984 levels of service. Children initially labeled as speech impaired tended to be placed in lower levels of service in 1984 than children originally classified as multihandicapped. Twenty percent of the children identified as speech impaired were no longer handicapped in 1984; 38 percent were receiving only consultative, itinerant, or resource room support; and 42 percent were enrolled in full-time special education (Levels 4, 5, and 6). This diversity in outcomes probably reflects the fact that the group of children identified as speech and language impaired included some children with mild speech impairments as well as others with severe language disorders. Among children identified as multihandicapped, only 5 percent were not labeled handicapped in 1984; 9 percent were served on a consultative, itinerant, or resource room basis; and 86 percent were placed in self-contained special education.

Most of the children initially labeled as having low incidence handicaps (i.e., mental retardation or hearing, visual, emotional, and orthopedic impairments) were placed in full-time special education in 1984. The table shows, however, some variation in outcome for children identified as hearing impaired or visually impaired.

Age at Initial Placement. Table 3.10 examines the 1984 placement levels of children who entered special education at different ages. While 60 percent of the preschool-identified children were placed in full-time special education in 1984, those children identified at younger ages were more likely to be enrolled in special schools than preschoolers not identified until age four. This finding probably reflects the more serious impairments identifiable in infancy and should not be interpreted to mean that earlier intervention is less effective.

Demographics. Finally, the study looked at the placement outcomes for children with different demographic characteristics (see Table 3.11). The mean level of service in 1984 for all children in the preschool sample was 3.4. There were no significant differences with respect to any of the demographic characteristics examined. With the exception of SES, these findings were confirmed by the regression analysis (see below).

Predictors of 1984 Placement Level. Multiple regression was used to explore the relationship between several possible predictors of the child's 1984

TABLE 3.9

1984 Level of Service by Initial Handicapping Condition
for Preschool-identified Children

Initial Handicap	N	1984 Level of Service				
		Not Handicapped	Levels 1 and 2	Level 3	Level 4	Levels 5 and 6
		Percentage				
Mentally Retarded	4	0	0	0	50	50
Hearing Impaired	17	0	6	29	0	65
Speech Impaired	173	20	26	12	20	22
Visually Impaired	13	15	31	15	8	31
Emotionally Impaired	2	0	0	0	0	100
Orthopedically Impaired	16	6	6	0	0	88
Learning Disabled	1	0	0	0	100	0
Multihandicapped	97	5	5	4	22	64
Diagnostic	12	17	8	17	17	42
TOTALS	335	13	17	10	19	41

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

TABLE 3.10

1984 Level of Service by Age at Special Education Entry
for Preschool-identified Handicapped Children

Age Child Began Special Education	N	1984 Level of Service: Not Handicapped	Levels 1 and 2	Level 3	Level 4	Levels 5 and 6
		Percentage				
Age 0-23 months	77	8	3	7	16	68
Age 24-47 months	135	11	21	10	19	39
Age 48-59 months	123	19	22	12	20	28
TOTALS	335	13	17	10	19	41

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

TABLE 3.11

Mean 1984 Level of Service for Different Groups of Preschool-identified Handicapped Children

	N	Mean 1984 Level of Service	Statistical Significance
TOTAL SAMPLE	335	3.4	
Males	222	3.3	NS
Females	113	3.6	
Whites	251	3.4	NS
Blacks	66[a]	3.3	
Low SES	61	3.5	
Middle SES	164	3.3	NS
High SES	72[b]	3.3	
Single Parent	59	3.6	NS
Both Parents	276	3.4	
Family Structure Change	45	3.6	NS
No Family Structure Change	290	3.4	

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.

level of service.[4] Only two variables emerged as making significant contributions to explaining the variance in 1984 placement level: initial speech handicap and SES. Initial speech handicap was the most important, accounting for 15 percent of the variance; SES only accounted for an additional 2 percent of the variance explained. Specifically:

- Controlling for other factors, preschoolers identified as speech impaired were more likely to be placed in lower levels of service in 1984 than preschoolers with other handicaps.

- In addition, children from lower SES families tended to be enrolled in more intense service levels in 1984 than higher SES children.

Movement to Less Restrictive Environments. To determine whether or not handicapped children identified as preschoolers were moving to less or more restrictive environments several years later, the study looked at the child's 1984 level of service in relation to his/her initial placement level. Movement to a less restrictive environment was defined as a reduction in the amount of special education services received (movement to a more restrictive environment was defined as an increase) from the child's initial placement to 1983-84.

Thirty percent of the preschoolers had moved to a placement involving less special education over the course of the follow-up period, 17 percent required more service, and 53 percent remained in the same amount of service. To determine which preschoolers tended to move to less or more restrictive environments, changes in placement level were also examined by initial placement level, initial handicap and age at first service, and for different demographic groups. Analyses showed the following:

- Preschoolers who began in full-time special education were much more likely to remain in the same amount of service than children starting in Level 2 or 3 (Table 3.12).

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4. The special education factors were chosen to reflect initial special education status and include those variables previously discussed:

- Age at initial special education service
- Initial placement level
- Initial handicap of speech impairment
- Initial handicap of multihandicapped

The six demographic variables included the following:

- Sex
- Race
- Socioeconomic status
- Number of parents in the household
- Number of siblings
- Change in family structure since special education entry

TABLE 3.12

Changes in Amount of Service for Preschool-identified Handicapped Children

Initial Placement Level	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
Itinerant or Resource Room Level 2 or 3	104	27	19	54
Special Class or School Home-based Levels 4, 5, or 7	231	32	68	N/A
TOTALS	335	30	53	17

Note: Table entries are within row percentages.

- Preschoolers initially labeled multihandicapped tended to require the same amount of service several years later, while children identified as speech impaired were about equally likely to move to a less or more restrictive environment or to remain in the same amount of service (Table 3.13).

- Children initially identified as speech impaired and placed in Level 5 programs were more likely to move to less restrictive environments (54%) than those identified as multihandicapped who started in Level 5 programs (16%).

- Children who first received special education before age four tended to remain in the same amount of service several years later. Children identified at the age of four, on the other hand, had diverse outcomes (Table 3.14).

- Finally, analyses of demographic data indicated that among children moving to less restrictive environments, blacks, children from low SES families, and children from single-parent homes were significantly underrepresented. In contrast, blacks and children from low SES families were significantly overrepresented in the group of students requiring greater levels of service (Table 3.15).

1984 Handicapping Condition

Analysis of the data on 1984 handicapping conditions showed that 13 percent of the preschoolers were no longer considered handicapped several years after preschool identification (Table 3.16). **Forty-two percent retained the same primary handicap level as was identified in preschool, and 45 percent experienced some change in their primary handicap label. This latter figure clearly suggests that among children first identified as handicapped in preschool many will show the emergence of a different primary problem later in elementary school.** Of those preschoolers still classified as handicapped in 1984, the most frequent handicapping conditions were multihandicapped (23%), learning disabled (20%), and speech impaired (19%) (see Table 3.17). Relationships were explored between the 1984 handicap data and the handicapping condition and demographics of the sample at the time of initial placement.

Initial Handicapping Condition. Table 3.17 shows that children initially labeled as speech impaired had the highest probability of no longer being handicapped in 1984 (20%) but were almost as likely to be labeled learning disabled (26%) as still speech impaired (34%). Many of the children who later were classified as learning disabled had originally been identified as speech impaired through the Head Start Program. These findings probably reflect two factors regarding handicap classifications: (1) that the speech impaired classification includes children with mild speech impairments as well as those with severe language disorders, and (2) that learning disability is a handicap typically not identified until school age. In addition to the relatively frequent transition from speech impaired to learning disabled as the primary handicap, the study found that the most frequent combination of handicaps among the 99 children who had more than one disability code in 1984 was learning disability and speech impairment (49%).

TABLE 3.13

Changes in Amount of Service for Preschool-identified Children with Different Handicapping Conditions

Initial Handicap	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
Mentally Retarded	4	0	100	0
Hearing Impaired	17	35	65	0
Speech/Language Impaired	173	39	32	30
Visually Impaired	13	62	39	0
Emotionally Impaired	2	0	100	0
Orthopedically Impaired	16	13	69	19
Learning Disabled	1	0	100	0
Multihandicapped	97	14	84	2
Diagnostic	12	42	58	0
TOTALS	335	30	53	17

Note: Table entries are within row percentages. Some total row percentages do not total due to rounding.

TABLE 3.14

Changes in Amount of Service for Preschool-identified Children Who First Received Special Education Services at Different Ages

Age Child Began Special Education	N	Lesser Level of Service	No Change	Greater Level of Service
		Percentage		
Age 0-23 months	77	17	79	4
Age 24-47 months	135	38	56	6
Age 48-59 months	123	31	33	37
TOTALS	335	30	53	17

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

TABLE 3.15

Changes in Amount of Service for Different Groups of Preschool-identified Handicapped Children

	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
TOTAL SAMPLE	335	30	53	17
Males	222	32	49	19
Females	113	27	61	12
Whites	251	33	55	12
Blacks	66[a]	23	41	36
Low SES	61	23	43	34
Middle SES	164	35	51	13
High SES	72[b]	38	56	7
Single Parents	59	17	64	19
Both Parents	276	33	50	16
Family Change	45	24	56	20
No Family Change	290	31	52	16
		Mean		
Number of Siblings	333[c]	1.4	1.3	1.8

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.
c. Number of siblings was not available for two children.

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

TABLE 3.16

Changes in Handicapping Condition for Preschool-identified Children

Initial Handicap	N	Change - No Longer Handicapped	No Change	Change in Handicap
		Percentage		
Mentally Retarded	4	0	25	75
Hearing Impaired	17	0	94	6
Speech/Language Impaired	173	20	34	47
Visually Impaired	13	15	46	39
Emotionally Impaired	2	0	100	0
Orthopedically Impaired	16	6	50	44
Learning Disabled	1	0	100	0
Multihandicapped	97	5	49	46
Diagnostic	12	17	0	83
TOTALS	335	13	42	45

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

TABLE 3.17

1984 Handicapping Condition by Initial Handicapping Condition

Initial Handicap	N	1984 Primary Handicapping Condition										
		Not Handicapped %	Mentally Retarded %	Hearing Impaired %	Speech Impaired %	Visually Impaired %	Emotionally Impaired %	Orthopedically Impaired %	Other Health Impaired %	Learning Disabled %	Multihandicapped %	Diagnostic %
Mentally Retarded	4	0	25	0	0	0	0	0	0	25	50	0
Hearing Impaired	17	0	0	94	6	0	0	0	0	0	0	0
Speech Impaired	173	20	2	0	34	0	3	1	1	26	13	1
Visually Impaired	13	15	0	0	0	46	0	0	0	31	8	0
Emotionally Impaired	2	0	0	0	0	0	100	0	0	0	0	0
Orthopedically Impaired	16	6	13	6	0	0	0	50	0	0	25	0
Learning Disabled	1	0	0	0	0	0	0	0	0	100	0	0
Multihandicapped	97	5	16	1	6	1	4	4	1	12	49	1
Diagnostic	12	17	0	8	0	8	25	0	0	42	0	0
TOTALS	335	13	7	6	19	2	4	4	1	20	23	1

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

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Multihandicapped preschoolers were the more stable group with regard to handicap; 49 percent were still labeled multihandicapped in 1984; and 5 percent were no longer handicapped. The remaining 46 percent were labeled with some other handicap, most frequently mental retardation (16%) or learning disability (12%).

Among the 53 children initially classified with other handicaps, 64 percent retained the same handicap label at the end of the follow-up period. Children initially labeled as mentally retarded or as orthopedically or visually impaired showed the most change in handicap label; mentally retarded (50%) and orthopedically impaired (25%) children were often classified as multihandicapped in 1984. Children identified as visually impaired frequently were labeled learning disabled in 1984 (31%). These trends should be interpreted cautiously given the small number of children on which they are based.

Demographics. Table 3.18 shows that there were no substantial demographic differences in the percentage of children no longer handicapped or labeled speech impaired. However, among those labeled learning disabled in 1984, blacks and children from low SES families were overrepresented. Females were overrepresented among those classified as multihandicapped in 1984. The magnitude of these demographic differences ranged from 6 to 14 percentage points.

SUMMARY AND DISCUSSION

Although there was a wide range of handicapping conditions among the preschool-identified children, most fell into one of two groups: children identified from birth to three years of age as either multihandicapped or speech impaired and placed in self-contained preschool programs and youngsters identified as four year olds and placed in itinerant speech therapy. Thus, there was a strong relationship between the child's initial handicap label, his/her age at identification, and initial placement level. More seriously impaired children tended to be identified at younger ages and placed in more intensive services; while less seriously handicapped youngsters, primarily those with mild speech impairments, were identified as four year olds and placed in itinerant services. If initial placement status accurately reflects the child's special education needs, these findings suggest that early identification procedures were operating effectively to locate the more seriously impaired children at younger ages and place them in more intensive services.

SES and race were significantly but weakly related to the child's initial special education status. Children from lower SES families and blacks tended to be identified as four year olds and placed in itinerant services. Whites and children from higher SES families tended to be identified at younger ages and placed in Level 5 preschool programs. Lower SES children were more likely to be labeled speech impaired, while higher SES children tended to be labeled multihandicapped. These demographic differences in initial special education status could be explained at least in part by the large number of low-income Head Start children in the preschool sample who received Level 2 speech services.

When the special education placements of all the preschool-identified children were examined several years later, 30 percent of the preschoolers

TABLE 3.18

1984 Handicapping Condition
for Different Groups of Preschool Children

	N	1984 Handicapping Condition: Not Handicapped	Speech Impaired	Learning Disabled	Multi-handicapped	Other Handicap
		Percentage				
TOTAL SAMPLE	335	13	19	20	23	24
Males	222	13	21	22	19	26
Females	113	13	17	18	31	21
Whites	251	12	20	20	24	24
Blacks	66[a]	17	18	26	18	21
Low SES	61	12	16	28	25	20
Middle SES	164	15	24	18	18	24
High SES	72[b]	15	18	14	22	31
Single Parents	59	10	15	20	15	39
Both Parents	276	14	20	20	25	21
Family Change	45	16	16	18	22	29
No Family Change	290	13	20	21	23	23
		Mean				
Number of Siblings	333[c]	1.5	1.6	1.6	1.3	1.3

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 38 children.
c. Number of siblings was not available for two children.

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

had moved to less restrictive environments, including 13 percent who were no longer considered handicapped. However, 87 percent of the preschoolers were still receiving some level of special education services in 1984, including 60 percent who were enrolled in self-contained special education programs. For those preschoolers still classified as handicapped in 1984, multi-handicapped (23%), learning disabled (20%), and speech impaired (19%) were the most frequent handicapping conditions.

Among the younger preschoolers, the child's initial handicap directly predicted his/her handicap classification several years later. For example, children initially labeled as multihandicapped were more likely to be classified as multihandicapped in 1984 than other children in the sample. Level of service in 1984 was best predicted by the child's initial handicap label. Children identified as speech impaired were more likely to be considered no longer handicapped or to be in lower service levels several years later than children initially labeled with other handicaps. This finding is not surprising, considering the fact that this handicapping classification includes many mildly impaired children whose needs can be met with itinerant support or whose speech and language deficits can be remediated.

The Head Start-identified preschoolers tended to require more intensive services in elementary school than their higher SES peers. Fifty-four percent of the Head Start-identified speech impaired children moved to higher levels of service in elementary school (compared to 37 percent of the other Level 2 speech impaired preschoolers) and were most frequently labeled learning disabled.

Of all the demographic variables examined, only SES had a consistent relationship to the 1984 outcome data; this relationship was statistically significant but weak. However, these socioeconomic differences in elementary special education placements were found when initial differences in handicapping condition and placement level were controlled. This means that of the preschoolers initially identified with the same handicapping condition and placed in the same level of service, those from lower SES families required more intensive placements in elementary school than higher SES children. This finding is consistent with the literature which suggests that low-income children are at a higher risk to develop learning problems (Sameroff and Chandler, 1975) and with repeated studies which have shown a relationship between family background and school performance (Deutsch, 1973).

These analyses did not include any information on the child's specific deficits and intensity of service needs, so it is impossible to rule out socioeconomic and racial population differences in handicapping conditions and severity as an explanation for the SES and racial differences found. The relatively large amount of variance which remained unexplained in these analyses suggests that other factors which were not included are related to the child's initial placement status or special education outcomes in 1984 (e.g., the child's developmental and educational history prior to MCPS preschool identification, developmental test scores, intervening special education placement history, or areas of need). Clearly, the variables examined in the current study present only a small part of the picture. Still, the finding that SES was related to both the child's initial special

education status and to his/her service level several years later suggests that special education placement procedures may warrant further examination. This possibility will be further explored in Chapter 5 which includes a more detailed discussion of the socioeconomic and racial differences found in initial and elementary school special education placements among both preschoolers and kindergarteners.

Chapter 4

SPECIAL EDUCATION PLACEMENT AND OUTCOMES OF KINDERGARTEN-IDENTIFIED HANDICAPPED CHILDREN

SUMMARY

Handicapped children identified in kindergarten were predominantly labeled either speech impaired or learning disabled and placed in Level 2 itinerant services. This suggests that the more seriously impaired children had already been identified as preschoolers. Race and SES were weak but statistically significant predictors of initial special education status. White children were more likely to be classified as speech impaired and to be placed in a lower level of service; blacks and children from lower SES families were more likely to be labeled learning disabled.

When their educational histories were examined three to four years later, 39 percent of the kindergarteners had moved to less restrictive environments, including 32 percent who were no longer classified as handicapped. However, 31 percent were receiving a greater amount of special education service. The relationship between 1984 special education outcomes and possible predictors such as initial special education status and demographic factors was explored. The strongest relationship was found between kindergarten placement level and level of service three to four years later, with children initially placed in lower levels of service most likely being in lower service levels in 1984. Handicap classification in kindergarten also directly predicted the child's handicap in the third or fourth grade. Among the demographic variables examined, SES and sex were weakly related to 1984 service level. Children from higher SES families and girls were more likely to be in lower levels of service in 1984 than were lower SES children and boys.

KINDERGARTEN SAMPLING STRATEGY

The kindergarten sample consisted of 285 children enrolled in MCPS in 1983-84 who first received special education services through MCPS as five year olds in either 1979-80 or 1980-81. More specifically, criteria for inclusion in the kindergarten sample were the following:

- Age criterion: That the child was born in 1974 or 1975 and thus was age-eligible (five years old by 12/31) for kindergarten in 1979-80 or 1980-81, respectively

- Special education criterion: That the child received Level 2 or above special education services through MCPS for the first time

as a five year old[1]

- o Enrollment criterion: That the child was continuously enrolled in MCPS from 1979-80 or 1980-81 through 1983-84 so that complete placement history information could be obtained for each intervening year

These children were located by searching the MCPS computerized pupil data base and the Computerized Educational Data System (CEDS). Approximately 450 children who met these sample selection criteria were found. Since the study design required about 300 kindergarten-identified children, all children initially labeled with a low-incidence handicap (mental retardation; hearing, emotional, visual, and orthopedic impairments; and multiple handicaps and diagnostic) or who began in a self-contained special education (Level 4 or 5) program were included. Children identified as speech impaired or learning disabled were then proportionately sampled until a total of approximately 300 children was located. Consequently, the final sample was not intended to represent the distribution of handicaps in the kindergarten-identified MCPS population but rather to include as many seriously impaired youngsters as possible.

INITIAL SPECIAL EDUCATION IDENTIFICATION AND PLACEMENT

Handicapping Condition and Placement Level

Despite the sampling strategy employed, the kindergarteners in the study were predominantly speech impaired or learning disabled and were receiving Level 2 itinerant services. Table 4.1 presents the number and percentage of kindergarteners by their initial handicapping condition and level of service; 53 percent of the kindergarteners were speech impaired, and 38 percent were learning disabled. Only 13 children, or 5 percent of the kindergarten sample, were initially classified as mentally retarded, hearing impaired, visually impaired, orthopedically impaired, or multihandicapped. Since all kindergarteners so labeled were included in the sample, while the speech impaired and learning disabled were proportionately sampled, this percentage is an overestimate of the frequency of seriously impaired children identified in kindergarten.

Data in Table 4.1 also indicate that 74 percent of the kindergarteners in the sample first received itinerant (Level 2) special education services and 16 percent started in resource room services (Level 3). Only 28

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1. Generally, children in the kindergarten sample had not received any special education services before entering kindergarten. However, the records of 35 kindergarteners (12%) indicated that they had received previous special education services, either elsewhere before moving to MCPS, from a private therapist, or during the summer before kindergarten from a county program (e.g., summer speech therapy). Although these services were documented in the records of these 35 children, there was no way of knowing in the absence of such information whether or not the other kindergarteners had a previous history of receiving special education. Consequently, it was decided to define the sample in terms of when service was first provided through MCPS during the school year.

TABLE 4.1

Initial Levels of Service for Kindergarten-identified Children with Different Handicapping Conditions

Initial Handicap	N	Initial Level of Service: Level 2	Level 3	Level 4	Level 5	Total
		Percentage				
Mentally Retarded	3	0	0	0	100	1
Hearing Impaired	1	0	100	0	0	0
Speech/Language Impaired	150	93	1	5	1	53
Visually Impaired	2	50	0	0	50	1
Orthopedically Impaired	2	0	50	0	50	1
Other Health Impaired	1	0	0	0	100	0
Learning Disabled	108	61	38	1	0	38
Multihandicapped	5	0	0	20	80	2
Diagnostic	13	39	8	54	0	5
TOTALS	285	74	16	6	4	100

Note: Table entries are within row percentages except total percentage column. Some total row percentages do not equal 100 due to rounding.

children or 10 percent of the sample began in special classes (Level 4) or special schools (Level 5). This percentage is an also overestimate due to the sampling procedures.

The high percentage of Level 2 kindergarteners relative to the numbers of Level 3, 4, and 5 kindergarteners is not surprising in light of the following considerations:

- o Children first identified in kindergarten should be only mildly handicapped if Child Find procedures are working to identify more seriously impaired children as preschoolers.

- o When the choice is between a Level 2 or 3 kindergarten placement, the child is more likely to be placed in the lesser amount of service for the following reasons:

  - Kindergarten is the child's first school experience and it is thus desirable to minimize the amount of time the child spends outside of the regular classroom.

  - Most MCPS kindergartens meet only half-day; Level 3 services, defined as one to three hours of direct service per day, would not be very feasible for a child attending school only three hours per day.

There were only 31 kindergarten-identified children with intense service level requirements or handicaps usually identifiable in preschool (some children were in both groups). The records of these children suggested that at least 22 of them had been identified as handicapped before kindergarten. Twelve children had received special education services during the previous summer through MCPS or in another county before moving to MCPS; ten had been previously screened (five before kindergarten roundup) or tested for handicapping conditions but for various reasons did not receive any services until kindergarten. The records of the remaining nine children showed no evidence of problems before receiving services in kindergarten; generally, however, there was little information in student records prior to kindergarten identification. Despite uncertainty about the previous histories of these nine children, the records of the other 22 children indicate that they had actually been identified before entering kindergarten but had not received services through MCPS during the school year.

In sum, it appears that seriously handicapped children are being identified before they enter kindergarten. Of the few seriously impaired youngsters entering MCPS special education as five year olds, most had actually been identified either by MCPS or elsewhere as preschoolers but did not receive their first special education services through MCPS until they started kindergarten.

One objective of this study was to provide descriptive data on the children who were first identified as handicapped in kindergarten. Initial placement level and handicapping condition were examined for several different demographic groups.

Relationships Between Initial Placement Level, Initial Handicapping Condition, and Student Demographic Characteristics

Initial Placement Level. Table 4.2 presents the mean initial placement level for the entire kindergarten sample and for four different demographic comparisons: sex, race, SES, and number of parents in the household. SES and number of parents were coded at the time of the child's entry into special education. The mean initial placement level for all kindergarteners was 2.4 which is consistent with the fact that 74 percent of the kindergarteners started in Level 2 special education services.

Looking at the demographic comparisons, males and females; children from low, middle, and high SES families; and children from single-parent and two-parent households were placed at roughly the same level of service in kindergarten. Black children, however, had a significantly higher ($p<.001$) mean initial placement level than white children. This difference was more striking when the percentages of black and white kindergarteners placed in itinerant (Level 2), resource room (Level 3), or full-time special education (Levels 4 and 5) were compared:

- White children (82%) were more likely initially to receive itinerant services than black children (55%); black kindergarteners were more likely to be placed in resource rooms (30%) or self-contained special education (15%) than white kindergarteners (12% and 7%, respectively).

A regression analysis was used to explore the relationship between several possible demographic predictors of initial placement level in kindergarten. These demographic predictors included the variables discussed above, sex, race, SES, and number of parents in the household, as well as number of siblings. Siblings were counted at the child's special education entry. All black and white kindergarteners with a complete set of data on these demographic variables were included (N = 242). The regression analysis confirmed race as the only significant, although weak, predictor of initial placement level. When all other demographic factors including SES were controlled, race accounted for 3 percent of the variance in initial placement level. Specifically:

- Regardless of differences in sex, SES, number of parents, or siblings, white children tended to be placed in lower levels of service in kindergarten than black children.

Initial Handicapping Condition. Table 4.3 presents the percentages of kindergarteners who were identified as either speech impaired, learning disabled, or as having another handicap. There were no sex differences in initial handicap nor any significant differences in number of siblings among speech impaired, learning disabled, and other handicapped kindergarteners. However, there did appear to be differences in initial handicap with regard to race, SES, and number of parents in the household:

- Among kindergarteners labeled as speech impaired, the study found that white children, children from high SES families, and children from two-parent households were overrepresented.

TABLE 4.2

Mean Initial Placement Level for Different Groups of Kindergarten-identified Handicapped Children

	N	Mean Initial Placement Level	Statistical Significance
TOTAL SAMPLE	285	2.4	
Males	176	2.4	NS
Females	109	2.4	
Whites	205	2.3	$p<.001$
Blacks	60[a]	2.7	
Low SES	53	2.4	
Middle SES	156	2.3	NS
High SES	57[b]	2.5	
Single Parent	47	2.6	NS
Both Parents	238	2.4	

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 19 children.

TABLE 4.3

Initial Handicapping Condition for
Different Groups of Kindergarten-identified Children

	N	Initial Handicapping Condition		
		Speech Impaired	Learning Disabled	Other Handicap
		Percentage		
TOTAL SAMPLE	285	53	38	10
Males	176	53	38	9
Females	109	52	38	10
Whites	205	61	32	8
Blacks	60[a]	25	58	17
Low SES	53	42	49	9
Middle SES	156	47	44	9
High SES	57[b]	75	14	11
Single Parents	47	32	55	13
Both Parents	238	57	35	9
		Mean		
Number of Siblings	280[c]	1.7	1.4	1.7

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 19 children.
c. Number of siblings could not be determined for five children.

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

- The distribution patterns were reversed for kindergarteners classified as learning disabled: blacks, children from low and middle SES families, and children from single-parent households were overrepresented.

These demographic differences in the percentage of children identified as speech impaired and learning disabled were relatively large, ranging from 20 to 36 percentage points. For example, 61 percent of the whites and 25 percent of the blacks were classified as speech impaired in kindergarten.

A regression technique was used to provide information about the separate effects of race, SES, and number of parents, while controlling for the other demographic variables.[2] In predicting identification as speech impaired, the regression analysis revealed that both race and SES significantly contributed to the variance but that race was the stronger predictor. When all five demographic variables were held constant, race accounted for 6 percent and SES for an additional 3 percent of the variance in predicting speech impairment as the initial handicap.

- Regardless of SES and other demographic differences, white children were more likely than black children to be labeled speech impaired in kindergarten.

- Furthermore, when all the demographic factors including race were controlled, children from higher SES families were more likely than lower SES children to be identified as speech impaired in kindergarten.

In the regression analysis of identification as learning disabled, three variables emerged as making significant contributions to the variance. A weighted combination of SES, number of siblings, and race accounted for 8 percent of the variance in initial classification as learning disabled, with SES alone contributing 6 percent of the variance. The data show the following:

- Regardless of race and the child's other demographic characteristics, children from lower SES families were more likely than higher SES children to be identified as learning disabled in kindergarten.

- In addition, holding the other demographic factors constant, kindergarteners from smaller families and black children were more likely to be labeled as learning disabled than children from larger families and whites.

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2. SES, race, and number of parents were correlated (r's ranged from .20 to .35, $p<.001$) in the kindergarten sample, suggesting that black families tended to be lower in SES and more often single-parent than white families.

Summary

Race and SES were consistent but statistically weak predictors of initial special education status. At best, these demographic factors explained only 9 percent of the variance in initial placement status. The large percentage of unexplained variance suggests that other variables which were not included in the regression, such as the nature and severity of the child's specific deficits, might better predict initial placement status.

Although the statistical relationships between race, SES, and initial placement status were weak, there was a significant racial difference in mean initial placement level as well as 26 to 36 percentage point differences with respect to race, SES, and initial handicapping condition. Especially, in light of documented racial imbalances in special education placements at higher grade levels, these socioeconomic and racial differences in kindergarten special education status may have serious long-term implications. The implications of these demographic differences in kindergarten placement level and handicap label will be explored after the outcomes of these kindergarten-identified handicapped children three to four years later are presented.

SPECIAL EDUCATION OUTCOMES IN 1984

A second objective of this study was to describe the special education status of these same children in 1983-84, three or four years after kindergarten. Two major categories of outcome variables were examined: level of service (including movement to less restrictive environments) and handicapping condition.

1984 Level of Service

Analyses of the 1984 service level data show that 32 percent of the children identified as handicapped in kindergarten were not receiving special education services three to four years later; and 24 percent were placed in consultative or itinerant services (Level 1 or 2), 19 percent in resource room services (Level 3), and 25 percent in self-contained special education (Level 4 and 5 service). Relationships between the 1984 service level data and several characteristics of the sample at the time of initial placement were explored. These characteristics are initial placement level, initial handicapping condition, and demographics.

Initial Placement Level. Table 4.4 shows the relationships between the initial and 1984 placement levels. The data suggest that kindergarteners who began special education at lower levels of service tended to be placed in the lower service levels in 1984; and children who started at higher levels of service were more likely to be in these higher levels three to four years later. For example, 82 percent of the kindergarteners initially placed in Level 2 or 3 services were receiving Level 3 or less services in 1984, and 86 percent of the children originally placed in Level 4 or 5 services were still in self-contained special education in 1984.

Initial Handicapping Condition. Table 4.5 shows the relationship between students' initial handicapping condition and the 1984 level of service. Thirty-nine percent of the children identified as speech impaired were no

TABLE 4.4

1984 Level of Service by Initial Placement Level
for Kindergarten-identified Handicapped Children

Initial Placement Level	N	1984 Level of Service: Not Handicapped	Levels 1 and 2	Level 3	Levels 4 and 5
		Percentage			
2-Itinerant	211	37	26	19	18
3-Resource Room	46	30	24	26	20
4-Special Class	17	0	12	6	82
5-Special School	11	0	9	0	91
TOTALS	285	32	24	19	25

Note: Table entries are within row percentages.

TABLE 4.5

1984 Level of Service by Initial Handicapping Condition
for Kindergarten-identified Children

Initial Handicap	N	1984 Level of Service: Not Handicapped	Levels 1 and 2	Level 3	Levels 4 and 5
		Percentage			
Mentally Retarded	3	0	0	0	100
Hearing Impaired	1	0	0	100	0
Speech/Language Impaired	150	39	27	15	19
Visually Impaired	2	0	50	0	50
Orthopedically Impaired	2	0	0	0	100
Other Health Impaired	1	0	0	0	100
Learning Disabled	108	29	24	26	21
Multihandicapped	5	0	0	0	100
Diagnostic	13	15	15	15	54
TOTALS	285	32	24	19	25

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

longer handicapped in 1984; and 27 percent were receiving only consultative or itinerant services, 15 percent were placed in resource rooms, and 19 percent were in special classes or special schools. Those children initially classified as learning disabled tended to be placed in higher levels of service in 1984 than children identified as speech impaired; while roughly the same percentage were receiving consultative or itinerant services, only 29 percent were no longer handicapped, 26 percent were in resource rooms, and 21 percent were in full-time special education. Of the 27 children initially labeled with other handicapping conditions, 70 percent required a self-contained special education placement three or four years after kindergarten.

Demographics. The mean level of service in 1984 for all children in the kindergarten sample was 2.1 (Table 4.6). Although children from single- and two-parent homes did not differ significantly in their 1984 placement level, there were significant sex, racial, and SES differences as well as differences for children whose family structure had or had not changed since kindergarten. Specifically:

- Males had a significantly higher mean 1984 service level than females; and 50 percent of the kindergarten-identified males as compared to 34 percent of their female peers were placed in resource rooms or full-time special education in 1984. In contrast, 67 percent of the females and 50 percent of the males received Level 2 or less services.

- Black children differed significantly from white children in their mean level of service in 1984. Specifically, 60 percent of the kindergarten-identified blacks and only 38 percent of their white peers were placed in Level 3 or higher services in 1984; in contrast, 63 percent of the white children and 40 percent of the black children were in itinerant, consultative, or no special education services three or four years after kindergarten.

- Children from low SES families had the highest mean level of service, and high SES children the lowest mean service level in 1984. In terms of percentages, 57 percent of the children from low SES families were placed in resource rooms or self-contained programs in 1984, compared to 27 percent of their high SES peers. Similarly, it was found that 74 percent of high SES children were placed in Level 2 or less services in 1984; while only 43 percent of the children from low SES families had similar placements.

- Finally, mean 1984 service level differed significantly for children whose family structure had or had not changed since kindergarten placement. Children whose families had changed since kindergarten identification were placed in higher levels of service than children with no family change.

Predictors of 1984 Placement Level. Multiple regression was used to explore the relationship between several possible predictors of the child's 1984 level of service. Initial placement level and handicap as well as the

TABLE 4.6

Mean 1984 Level of Service for Different Groups of Kindergarten-identified Handicapped Children

	N	Mean 1984 Level of Service	Statistical Significance
TOTAL SAMPLE	285	2.1	
Males	176	2.3	p<.05
Females	109	1.8	
Whites	205	2.0	p<.05
Blacks	60[a]	2.5	
Low SES	53	2.5	
Middle SES	156	2.1	p<.05
High SES	57[b]	1.7	
Single Parent	47	2.4	NS
Both Parents	238	2.1	
Family Structure Change	41	2.8	p<.01
No Family Structure Change	244	2.0	

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 19 children.

demographic factors[3] previously discussed were included.

In addition, the number of years the child was followed was included as a possible predictor variable; kindergarteners were followed either three or four years.

Three variables emerged as making significant contributions to the amount of variance explained. A weighted combination of initial placement level, SES, and sex accounted for 22 percent of the variance in 1984 level of service. Closer examination of these findings shows the following:

- Initial level of service was by far the strongest among these predictors, accounting for 18 percent of the variance alone. This means that when differences in initial handicap classification and demographic differences were controlled, children initially placed in lower service levels in kindergarten tended to require less special education three or four years later than those children initially placed in higher levels of service.

If placement level reflects the intensity of the child's special education needs, then this finding suggests that the more seriously impaired youngsters continue to require more intense levels of service; while less impaired children continue to require lesser amounts of service. The regression analysis also suggests that when initial placement status and demographic factors were held constant:

- Children from lower SES families and boys were more likely to be placed in higher levels of service in 1984 than children from higher SES families and girls.

- Race and change in family structure were not related to the 1984 service level.

Movement to Less Restrictive Environments. To determine whether children who had been identified as handicapped in kindergarten were moving to less or more restrictive environments several years later, the study looked at the child's 1984 level of service in relation to his/her initial placement level. Movement to a less restrictive environment was defined as a reduction in the amount of special education services received (movement to a more restrictive environment was defined as an increase) from the child's initial placement to 1983-84.

Overall, 39 percent of the kindergarteners had moved to a placement involving less special education over the course of the follow-up period, 31 percent required more service, and 30 percent remained in the same amount of service. To determine which kindergarteners tended to require more or less service, changes in amount of service over the follow-up period were also examined for children with different initial placement levels, different

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3. SES, race, and change in family structure were correlated (r's ranged from .16 to .34, $p<.005$) in the kindergarten sample, suggesting that black families tended to be lower in SES and more often had experienced a change in family structure during the follow-up period.

initial handicaps, and different demographic characteristics. Analyses show the following:

- Children who began in Level 2 or 3 special education services were more likely than children starting in self-contained special education to move to less restrictive environments (Table 4.7).

- While those initially labeled as speech impaired or learning disabled had approximately equal percentages of students moving to a less restrictive environment, the two groups did differ in their frequency of moving to more restrictive environments. Children initially identified as learning disabled were more likely to require a greater amount of service three to four years later than those children initially classified as speech impaired (Table 4.8).

- Finally, analyses of the demographic data show that males, children from low SES families, and children from changing families were underrepresented among children moving to less restrictive environments. There were also group differences for children requiring greater amounts of service three to four years after kindergarten. Males, blacks, children from low SES families, and children whose family structure had changed were overrepresented (Table 4.9).

1984 Handicapping Condition

Analyses of the data on 1984 handicapping conditions show that 32 percent of the kindergarten-identified children were no longer classified as handicapped three to four years after kindergarten (Table 4.10). Thirty-nine percent retained the same primary handicap as was identified in kindergarten, and 29 percent experienced some change in their primary handicap label. This latter figure suggests that among children first identified as handicapped in kindergarten, many will show the emergence of a different primary problem later in elementary school. Of those kindergarteners still considered handicapped in 1984, the most frequent handicapping conditions were learning disability (41) and speech impairment (19%) (see Table 4.11). Relationships were explored between 1984 handicap and the handicapping condition and demographics of the sample at kindergarten placement.

Initial Handicapping Condition. Table 4.11 shows that children initially labeled as speech impaired were more likely to be labeled learning disabled in 1984 (31%) than still speech impaired (27%). Learning disabled kindergarteners were the more stable group with regard to handicap, 57 percent of those kindergarteners identified as learning disabled were classified with the same primary handicap three or four years later, and 29 percent were no longer considered handicapped. Among the 14 children initially classified with other handicaps, 64 percent retained the same handicap label three to four years later.

Several things are suggested by these numbers. Children first identified as speech impaired either are easily remediated (e.g., children receiving speech therapy for mild articulation problems) or may have other areas of

TABLE 4.7

Changes in Amount of Service for
Kindergarten-identified Handicapped Children

Initial Placement Level	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
Itinerant or Resource Room Level 2 or 3	257	42	24	34
Special Class or School Level 4 or 5	28	14	86	0
TOTALS	285	39	30	31

Note: Table entries are within row percentages.

TABLE 4.8

Changes in Amount of Service for Kindergarten-identified Children with Different Handicapping Conditions

Initial Handicap	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
Mentally Retarded	3	0	100	0
Hearing Impaired	1	0	100	0
Speech/Language Impaired	150	43	27	30
Visually Impaired	2	0	100	0
Orthopedically Impaired	2	0	50	50
Other Health Impaired	1	0	100	0
Learning Disabled	108	41	22	37
Multihandicapped	5	0	100	0
Diagnostic	13	23	62	15
TOTALS	285	39	30	31

Note: Table entries are within row percentages.

TABLE 4.9

Changes in Amount of Service for Different Groups of Kindergarten-identified Handicapped Children

	N	Lesser Amount of Service	No Change	Greater Amount of Service
		Percentage		
TOTAL SAMPLE	285	39	30	31
Males	176	35	30	35
Females	109	47	29	24
Whites	205	41	31	28
Blacks	60[a]	37	23	40
Low SES	53	32	26	42
Middle SES	156	38	29	33
High SES	57[b]	49	39	12
Single Parents	47	36	30	34
Both Parents	238	40	30	30
Family Change	41	29	29	42
No Family Change	244	41	30	29
		Mean		
Number of Siblings	280[c]	1.4	1.8	1.6

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 19 children.
c. Number of siblings was not available for five children.

Note: Table entries are within row percentages.

TABLE 4.10

Changes in Handicapping Condition for Kindergarten-identified Children

Initial Handicap	N	Change - No Longer Handicapped	No Change	Change in Handicap
		Percentage		
Mentally Retarded	3	0	100	0
Hearing Impaired	1	0	100	0
Speech/Language Impaired	150	39	27	34
Visually Impaired	2	0	50	50
Orthopedically Impaired	2	0	100	0
Other Health Impaired	1	0	0	100
Learning Disabled	108	29	57	15
Multihandicapped	5	0	40	60
Diagnostic	13	15	0	85
TOTALS	285	32	39	29

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

need which are later manifested as learning disabilities. Again, the speech impaired classification includes children with mild speech impairments as well as those with serious language disorders. On the other hand, if a child is identified in kindergarten as learning disabled, that diagnosis is most likely to stay with him/her, at least through the third or fourth grade. Another large group of kindergarten-identified learning disabled children were no longer labeled handicapped three or four years later, suggesting that for some, a learning disability was either remediated or originally misdiagnosed. Finally, in addition to the relatively frequent transition from speech impaired to learning disabled as the primary handicap, the study found that among the 55 children who had more than one disability code in 1984, 41 children were labeled speech impaired and learning disabled.

Demographics. As previously noted, among the entire sample of kindergarten-identified children, 32 percent were no longer handicapped in 1984, 41 percent were classified as learning disabled, 19 percent were identified as speech impaired, and 9 percent had been diagnosed as having some other handicap (Table 4.12). When the corresponding percentages are compared for different demographic groups, there did appear to be some differences in 1984 handicap classification with regard to sex, race, SES, number of parents at home, and change in family structure.

- Females, whites, children from high SES families, and children whose family structure was stable were more likely to be classified as not handicapped in 1984 than males, blacks, low SES children, and children whose family structure had changed.

- Among children labeled as speech impaired in 1984, the data suggest that males, whites, and children from high SES families were overrepresented.

- Blacks, children from low and middle SES families, and children whose parent(s) had divorced or remarried were more likely to be labeled learning disabled than whites, high SES children, and children whose family structure had not changed.

- The number of children classified with other handicaps was generally low; but males, low SES children, children from single-parent homes, and children whose family structure had changed were more likely to receive these other labels than females, children from high SES families, children from two-parent homes, and children with no family change.

The magnitude of these demographic differences varied considerably (from 5 to 23 percentage points). The largest was the racial difference with respect to 1984 classification as learning disabled: 55 percent of the black children as compared to 38 percent of the whites were labeled learning disabled in 1984.

TABLE 4.12

1984 Handicapping Condition for Different Groups of Kindergarten-identified Children

		1984 Handicapping Condition			
	N	Not Handicapped	Speech Impaired	Learning Disabled	Other Handicap
		Percentage			
TOTAL SAMPLE	285	32	19	41	9
Males	176	28	21	41	11
Females	109	39	16	40	6
Whites	205	34	21	38	8
Blacks	60[a]	27	7	55	12
Low SES	53	28	15	42	15
Middle SES	156	31	17	45	6
High SES	57[b]	37	28	26	9
Single Parents	47	30	15	38	17
Both Parents	238	32	19	41	7
Family Change	41	20	17	46	17
No Family Change	244	34	19	40	7
		Mean			
Number of Siblings	280[c]	1.4	1.7	1.6	2.0

a. Other ethnic groups were not included in this analysis.
b. SES could not be determined for 19 children.
c. Number of siblings was not available for five children.

Note: Table entries are within row percentages. Some total row percentages do not equal 100 due to rounding.

SUMMARY AND DISCUSSION

Children first identified as handicapped in kindergarten were predominantly speech impaired or learning disabled and placed in Level 2 itinerant services. However, there were small but statistically significant racial and socioeconomic differences in initial placement status. White children were more likely to be labeled speech impaired and to be placed in a lower level of service in kindergarten, while black children and children from lower SES families were more likely to be labeled learning disabled.

Despite the relatively weak statistical relationship between demographic characteristics and initial placement status, there were large SES and racial differences in the percentages of children initially placed in itinerant as opposed to higher-level services and identified as speech impaired as opposed to learning disabled. In light of documented racial imbalances in special education placements at higher grade levels, these racial and socioeconomic differences in kindergarten special education placement may have serious long-term implications. These implications were explored when the study looked at the special education outcomes of these kindergarten-identified handicapped children in third or fourth grade.

When their placements were examined three to four years after kindergarten identification, 39 percent of the children had moved to less restrictive environments, including 32 percent who were no longer classified as handicapped. On the other hand, 25 percent were enrolled in self-contained special education, and the majority of those children still receiving special education required services as intensive or more intensive than those received in kindergarten. Learning disability (41%) and speech impairment (19%) were the predominant handicapping classifications among those children still considered handicapped in 1984.

The child's special education outcomes in third or fourth grade were best predicted by his/her initial placement status in kindergarten. That is, children initially placed in lower levels of service were more likely to be in lower-level placements in 1984 than other children in the sample. Similarly, children identified as speech impaired tended to be labeled speech impaired three to four years later, and children identified as learning disabled were more likely to be so classified in 1984 than other children in the sample. To the extent that special education status in kindergarten reflects the nature and degree of the child's impairment, these factors are likely to be related to the child's special education outcomes three or four years later.

However, there were also small but significant socioeconomic and sex differences in the 1984 placement level, with children from lower SES homes and boys more likely to be placed in higher levels of service in 1984 than higher SES children and girls. These findings appear to be consistent with the literature which suggests the following:

- Handicaps may differ with SES, at least to the extent that children from lower-income families are at higher risk to develop learning problems (Sameroff and Chandler, 1975).

- The distribution of handicapping conditions and the severity of needs are different among boys and girls, with boys tending to be

impaired more frequently, particularly among children classified as emotionally disturbed, learning disabled, and speech impaired (U.S. General Accounting Office, 1981; Satz and Zaide, 1983).

Data on the child's specific deficits were not included in these analyses, so it is impossible to eliminate SES and sex differences in the exact nature and level of the child's impairments as an explanation for the differences found in 1984 special education status. However, these socioeconomic differences in outcome placement level occurred when differences in initial special education status were controlled. This means that among children with the same initial handicap and level of service, those from lower SES families and boys were more likely to be placed in more intense levels of service in 1984 than higher SES children and girls.

In addition, socioeconomic and racial differences in initial special education status were found which, in turn, were related to the child's placement level and handicap classification in 1984. Consequently, blacks and children from lower SES families, who were overrepresented among those children labeled as learning disabled and placed in more intense levels of service in kindergarten, continued to be overrepresented among these groups three to four years later. That is, the child who was identified as speech impaired in kindergarten had a higher probability of moving out of special education than the child initially labeled as learning disabled. In a similar fashion, the child who initially received at the most one hour of special education service a day (Level 2) was less likely to eventually be placed in full-time special education than the child who was served in a resource room one to three hours a day (Level 3). If the racial and SES differences found in kindergarten special education status were <u>not</u> based on different special education needs, then the kindergarten identification and placement process requires further examination because different initial placements appear to result in different special education outcomes three or four years later.

There remained a large amount of unexplained variance in predicting initial and 1984 special education status. This suggests the possibility that other factors not included in these analyses (e.g., the child's prekindergarten history, developmental test scores, intervening special education placement history, and areas of need) were also related to the child's initial placement status or special education outcomes. It is clear that the variables included in the present study describe only a small part of the picture. Still, the finding that SES was related to both initial placement status in kindergarten and in special education outcomes three to four years later suggests that special education placement procedures may warrant further examination. This possibility will be explored further in Chapter 5 which includes a more detailed discussion of the socioeconomic and racial differences found in initial and elementary special education placements for both the preschool- and kindergarten-identified samples.

Chapter 5

DISCUSSION

The overall purpose of this study was to examine the efficacy of early identification procedures and to see how children, identified as handicapped in preschool or kindergarten, had progressed in their educational careers three to nine years after identification. Extensive data were presented on the initial placement status and special education outcomes of these preschool- and kindergarten-identified children. In addition, because of local and national interest in the effects of selected demographic characteristics on special education placement and outcomes, early identification procedures and the outcomes of early intervention were explored for different demographic groups. This chapter will review and discuss the study findings as they pertain to these issues.

Are early identification procedures operating effectively?

The study examined whether seriously impaired children and those with readily identifiable handicaps were being identified as preschoolers or were not located until they reached kindergarten. The preschool sample included several children with severe impairments or with handicaps such as hearing, visual, and orthopedic impairments which should be apparent in very young children, indicating that these children do exist in the Montgomery County population. The composition of the kindergarten sample was very different: it revealed very few children with readily identifiable or severe impairments. And, of the few seriously impaired youngsters entering special education as five year olds, most had actually been identified as preschoolers, either by MCPS or elsewhere, but did not receive services through MCPS until kindergarten. In addition, within the preschool sample, children with the most serious impairments were identified at younger ages and received more intensive services than those with milder deficits. This suggests that early identification procedures had been successful in locating the more seriously impaired children before they reached kindergarten and at younger ages within the preschool years.

What are the outcomes of program participation?

As previously mentioned, it is not legally or ethically possible to apply an experimental control group design to answer this question. It is also not appropriate to compare the preschool and kindergarten outcomes to determine whether the earlier intervention was more effective because the preschool-identified sample was much more seriously impaired than the kindergarten sample. In the absence of an experimental control group design or a suitable comparison group, this question could be addressed only by examining the placement outcomes of children who had received special education intervention as preschoolers or kindergarteners. One frequently used indicator of the effectiveness of early intervention is whether or not children require less intensive services or no services at all during their later school years. To examine this indicator, the study looked at services received by students in elementary school.

The analyses showed that, consistent with the severity of the impairments of the preschool-identified children, many still required special education in elementary school. A relatively small percentage were no longer receiving special services. Specifically, the study found the following:

- Eighty-seven percent of the preschoolers were still receiving some level of special education services in 1984, including 60 percent who were enrolled in self-contained special education.

- Among the preschool-identified children, 13 percent were no longer considered handicapped, 17 percent had moved to less restrictive environments, 53 percent remained in the same amount of service, and 17 percent required a greater amount of service four to nine years after identification.

- Those preschoolers most likely to require less intensive placements at the end of the follow-up period were initially identified as speech impaired rather than multihandicapped, began special education in lower levels of service, and were from higher SES families.

The findings for the kindergarten-identified children reflected their milder deficits, with a larger percentage no longer requiring services. Nonetheless, the majority of those still being served required services as intensive or more intensive than those received in kindergarten. Specifically, the study found that:

- Sixty-eight percent of the kindergarteners continued to receive some level of special education services in 1984; only 25 percent required self-contained settings.

- Within the kindergarten-identified sample, 32 percent were no longer considered handicapped, 7 percent had moved to a less restrictive environment, 30 percent remained in the same amount of service, and 31 percent required a greater amount of service by third or fourth grade.

- Kindergarteners initially placed in lower levels of service, those labeled speech impaired, children from higher SES families, and girls tended to require less intense services in 1984 than the other children in the kindergarten sample.

In sum, roughly one-third of the children who were identified as handicapped in preschool or kindergarten had moved to less restrictive environments or were no longer in special education in elementary school. These were primarily the more mildly impaired youngsters. Many of the more seriously impaired children in the sample remained in self-contained special education three to nine years later. This finding was consistent with the results of a recently completed follow-up study of preschool children with suspected handicaps in at least two developmental areas who were seen in the county's diagnostic facility (Developmental Evaluation Services for Children--DESC). Cooper and Hebbeler (1984) found that 75 percent of the children diagnosed as handicapped by DESC were in a self-contained special education classroom five years later. Such results could be interpreted to mean that early intervention is effective with mildly impaired children but not with

severely impaired or multihandicapped children.

On the other hand, these results highlighted the heterogeneity of the preschool special education population. The diversity of the population suggests that, instead of looking at the effectiveness of early intervention in general, one should be asking what are reasonable outcomes for children with different handicaps. Some children with relatively mild handicaps, such as speech and language impairments, or with very specific deficits, such as hearing, visual, or orthopedic impairments, who are identified at young ages and receive preschool intervention, can function in the regular elementary classroom with minimal or no special education assistance. On the other hand, is it realistic to expect that a child with multiple and serious impairments identified in infancy will be able to succeed in elementary school without full-time special education support? A study of the effectiveness of early intervention in terms of school-age placements may be setting up false expectations about what such intervention can accomplish. In presenting the study findings to policy makers, it must be emphasized that different expectations are appropriate for children with different handicaps and that some children may always require an intensive amount of service. This does not mean that early intervention is ineffective for these children. Rather, it may be that getting out of special education or requiring less intensive services is not an appropriate index of the effectiveness of early intervention for these more severely impaired youngsters. Other outcomes, such as the impact of early intervention on the family or on the child's adaptive behavior, should also be considered.

Do initial placement status or special education outcomes differ for different demographic groups?

The study also looked at whether initial placement status and the outcomes of program participation differed for children from different demographic groups. Small but statistically significant socioeconomic and racial differences were found in initial special education status for both preschoolers and kindergarteners. Within the preschool sample, children from higher SES families and whites were more likely to be identified before age four, to be labeled as multihandicapped, and to be placed in self-contained preschool programs. Lower SES children and blacks, on the other hand, were often not identified until four years of age when they entered Head Start and, subsequently, were labeled as speech impaired and received itinerant services. Among the kindergarten-identified handicapped children, white children were more likely to be classified as speech impaired and placed in itinerant services; while blacks and children from lower SES families were more likely to be labeled learning disabled.

When the special education outcomes of these preschool- and kindergarten-identified children were examined several years later, it was found that students from lower SES families were more likely to be placed in more intensive levels of service in 1984 than their higher SES peers. These socioeconomic differences in elementary special education placements were found when initial differences in handicapping condition and placement level were controlled. This means that of the children initially identified with the same handicapping condition and placed in the same level of service, those from lower SES families required more intensive placements in elementary school than higher SES children.

There are two alternative hypotheses to explain the socioeconomic and racial differences found in initial and later special education placements:

1. Early identification and placement procedures operated differently for children from different demographic backgrounds.

2. These children were correctly identified, labeled, and placed, suggesting that the distribution and development of handicapping conditions varies with SES and race.

The first explanation, that identification and placement procedures may be at fault, rests largely on the assumption that the distribution and development of handicapping conditions are similar for different socioeconomic and racial groups. With an equal distribution, similar proportions of children from different socioeconomic and racial groups should enter special education at the same ages, be classified with the same handicaps, and be placed in the same service levels. As these children move through the school system, they should continue to be assigned handicapping classifications and levels of service in similar proportions.

If handicaps are similarly distributed across different socioeconomic and racial groups, then the differences found in initial placement status suggest that early identification efforts are not reaching all demographic groups equally well. Children from different socioeconomic and racial groups are entering special education through different channels in the county; children from higher SES homes and whites through Child Find and other early identification mechanisms and lower SES children and blacks through Head Start or kindergarten. That is, the more seriously impaired white and higher SES children are identified in preschool, while the black and lower SES youngsters with lesser degrees of impairment are not identified until they reach Head Start or kindergarten. This would indicate that early identification procedures, which include outreach, referral, screening, and initial placement, were not operating as effectively for less severely impaired black and lower class children and should be examined further to assure that early identification efforts reach all demographic groups equally well.

Likewise, with a similar distribution of handicaps across all demographic groups, the differences found in later special education status would suggest that children are being differentially placed in elementary special education, either based on their socioeconomic status or on characteristics which are correlated with SES. If this is true, a close examination of current placement procedures is clearly called for to assure equitable and appropriate services.

The second hypothesis, that identification and placement procedures were accurate, is based on the assumption that the distribution of handicapping conditions differs across socioeconomic and racial groups. If this is the case, the problem may be more complex and difficult to address. Specifically, black children and children from lower SES homes may be more likely to develop learning problems which are difficult to identify at younger ages but which become apparent when the child enters a structured academic setting such as Head Start or kindergarten. In addition, lower SES children may continue to be more susceptible to learning disabilities

throughout their school careers if their learning problems are related to home factors which vary with socioeconomic level. This is consistent with the literature which suggests that infants from lower-income families are at higher risk to develop learning problems (Sameroff and Chandler, 1975) and repeated studies which have shown a relationship between family background characteristics and school performance (Deutsch, 1973).

The Head Start-identified preschoolers and the low SES kindergarten-identified children tended to require more intensive services in elementary school than their higher SES peers. On the surface, this suggests that these children might well have benefited from being identified earlier and from receiving more intensive services. However, it is difficult to identify a learning disability before academic work begins, and any efforts to do so may over-identify and label as handicapped many children who do not need early intervention. In addition, the findings of this study regarding the outcomes of program participation indicate that early intervention had resulted in a reduced need for services in elementary school for only one-third of the children, particularly those with milder impairments such as speech deficits. Consequently, even if special educators were able to identify these children accurately at younger ages, little is known about how to remedy learning disabilities in very young children. Regarding the SES differences found in later special education placements, schools continue to explore ways to remedy the learning problems of students who come from lower socioeconomic backgrounds.

If handicapping conditions are distributed differently across different socioeconomic and racial groups, then the study findings reflect these distributions. Still, early special educators may want to explore methods to better identify and serve those black and low SES children in preschool who later develop learning disabilities. In addition, the school system must continue to examine carefully the services provided to students from low SES families.

The data collected in this study do not permit firm conclusions to be drawn regarding the extent to which either of these hypotheses is true. And it is possible that both of these alternatives are to some extent responsible for the socioeconomic and racial differences found in initial and later special education status. Regardless of the explanation, from an MCPS policy perspective, these differences in initial placement and special education outcomes for handicapped children from different socioeconomic backgrounds are of concern. It is recommended that the identification and placement process be studied further to determine why children from families who differ in socioeconomic status have different special education placement outcomes in preschool and kindergarten as well as later in elementary school.

In sum, longitudinal data such as those collected for the study described here were useful in answering questions about the success of early identification procedures and the effectiveness of special education. Early identification procedures appear to be operating effectively in identifying more seriously impaired children before kindergarten, but these procedures may operate differently for children from different socioeconomic and racial backgrounds in the county. Roughly one-third of the preschool- and kindergarten-identified handicapped children had moved to less restrictive environments in elementary school. However, a majority of the more

seriously impaired children remained in self-contained special education classrooms. Experience with follow-up data on young handicapped children suggests that such data must be interpreted cautiously in regard to questions about the effectiveness of early intervention. Researchers must keep in mind the broad range in nature and severity of handicaps in the preschool special education population and what are realistic outcomes which would suggest that early intervention has been effective with the more seriously impaired children.

REFERENCES

Cooper, J. and Hebbeler, K. Follow-up study of children referred to Developmental Evaluation Services for Children. Montgomery County, Maryland: Department of Educational Accountability, Montgomery County Public Schools, November, 1984.

Deutsch, C. Social class and child development. In B. M. Caldwell and H. N. Ricciuti (Eds.), Child development and social policy, Chicago: University of Chicago Press, 1973.

Lazar, I., and Darlington, R. Lasting effects of early education: A report from the Consortium for Longitudinal Studies. Monographs of the Society for Research in Child Development, 1982, 47.

Maryland State Department of Education, Programs for Handicapped Children. COMAR 13A.05.01.

Office of Continuum Education, Montgomery County Public Schools, Maryland. Access to continuum education services: Area and central office procedures, 1981.

Sameroff, A. and Chandler, M. Reproductive risk and the continuum of caretaking casualty. In F. Horowitz (ed.), Review of Child Development Research. Chicago: The University of Chicago Press, 1975.

Satz, P. and Zaide, J. Sex differences: Clues or myths on genetic aspects of speech and language disorders? In C. L. Ludlow and J. A. Cooper (eds.), Genetic Aspects of Speech and Language Disorders. New York: Academic Press, 1983.

Schweinhart, L. and Weihart, D. Young children grow up: the effects of the Perry Preschool Program on youths through age 15. Ypsilanti, Michigan: High/Scope Educational Research Foundation, 1980.

United States General Accounting Office. Disparities still exist in who gets special education. Report to the Chairman, Subcommittee on Select Education, Committee on Education and Labor, House of Representatives, September 30, 1981.

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APPENDIX A

Comparisons of Preschool and Kindergarten Sample Characteristics

TABLE A-1

Initial Handicapping Condition
for Children Identified as Preschoolers and Kindergarteners

Initial Handicapping Condition	Preschool-identified Children		Kindergarten-identified Children	
	N	%	N	%
Mentally Retarded	4	1	3	1
Hearing Impaired	17	5	1	0
Speech/Language Impaired	173	52	150	53
Visually Impaired	13	4	2	1
Emotionally Impaired	2	1	0	0
Orthopedically Impaired	16	5	2	1
Other Health Impaired	0	0	1	0
Learning Disabled	1	0	108	38
Multihandicapped	97	29	5	2
Diagnostic	12	4	13	5
TOTALS	335	101	285	101

Note: Table entries are within column percentages. Due to rounding, some cell percentages are 0 and total percentages do not equal 100.

TABLE A-2

Initial Placement Level
for Children Identified as Preschoolers and Kindergarteners

Initial Placement Level	Preschool-identified Children		Kindergarten-identified Children	
	N	%	N	%
Level 2 - Itinerant	103	31	211	74
Level 3 - Resource Room	1	0	46	16
Level 4 - Special Class	5	2	17	6
Level 5 - Special School	211	63	11	4
Level 7 - Home-based	15	5	0	0
TOTALS	335	101	285	100

Note: Table entries are within column percentages. Due to rounding, some cell percentages are 0 and total percentages do not equal 100.

TABLE A-3

Demographic Characteristics at Special Education Entry
of Preschool-identified and Kindergarten-identified Children

	N	Preschool-identified %	Kindergarten-identified %
Sex			
Male	398	66	62
Female	222	34	38
Race			
American Indian/Alaskan	1	0	0
Asian/Pacific Islander	14	2	3
Black/Negro (not Hispanic)	126	20	21
White (not Hispanic)	456	75	72
Hispanic	23	3	4
Parent Education (Mean Years)			
Father	352	14.9	14.4
Mother	399	13.6	13.3
Father's Occupation	(482)		
Not employed outside home	5	2	0
Unskilled	23	6	3
Semi-skilled	61	11	14
Skilled	176	34	40
Professional	217	47	42
Mother's Occupation	(576)		
Not employed outside home	311	57	50
Unskilled	22	3	5
Semi-skilled	51	9	8
Skilled	123	19	25
Professional	69	12	13
Child's Primary Language	(616)		
English	576	95	92
Non-English & Dual	40	5	8
Primary Language in Home	(616)		
English	568	93	91
Non-English & Dual	48	7	9
Child's Citizenship	(614)		
U.S.	605	99	99
Non-U.S.	9	2	1
Parents Living in Home			
Both Parents	514	82	84
Single Parent	106	18	17
Number of Siblings (Mean)	613	1.4	1.6
Birth Order (Mean)	613	2.1	2.1

Note: Table entries are within column percentages. Due to rounding, some cell percentages are 0 and some total column percentages do not equal 100. Demographic differences between the preschool- and kindergarten-identified groups were not statistically significant.

APPENDIX B

Derivation of Socioeconomic Status Variable

APPENDIX B

DERIVATION OF SOCIOECONOMIC STATUS VARIABLE

Socioeconomic status (SES) is usually based on parental occupation, parental education, and/or family income. Although family income was not available, we did code father's and mother's educational level and occupational status at the time of the child's entry into special education. Unfortunately, many children in the sample did not have data on all four of these SES indicators. In addition, as shown in the table below, no one indicator was available for all 620 children in our sample.

SES Indicator	N
Mother's occupation	576
Father's occupation	482
Mother's education	399
Father's education	352

Although the largest number of children had data on mother's occupation, this variable was not a very good indicator of SES because 54 percent of the mothers for whom we had data did not work outside the home. Consequently, father's occupation was selected as the primary indicator of SES. If a child did not have data on this variable, then his/her SES was based on mother's education (N=81). The remaining 57 children had no SES indicator because no data were available on father's occupation, mother's education, or father's education.

Father's occupation was originally coded on the following 9-point scale:

1 = executives, major professionals
2 = managers, proprietors
3 = administrative personnel
4 = clerical workers
5 = skilled workers
6 = semiskilled workers
7 = unskilled workers
8 = retirement, pension
9 = unemployed

To create a 3-point SES scale, this occupational scale was reduced as follows:

High SES = executives, major professionals, managers, proprietors
Middle SES = administrative personnel, clerical and skilled workers
Low SES = semiskilled and unskilled workers, unemployed

Mother's education was originally coded in years completed. To use mother's education for the 3-point SES scale, years of education was also reduced to a 3-point scale.

High SES = Bachelor's degree or above (16 years or more)
Middle SES = High school graduate to 3 years college (12 to 15 years)
Low SES = Less than high school graduate (11 years or less)

In sum, for most of the children in the sample, SES was based on father's occupational status (N=482). When data on this variable were not available, SES was based on mother's education (N=81). These two variables are highly correlated ($r=.59$, $p<.001$), suggesting that when data were not available on one variable, the other was a good substitute indicator of SES. The sample distributions of the SES index and the two indicator variables are shown below:

	SES (N=563)	Father's Occupation (N=482)	Mother's Education (N=399)
	%	%	%
Low SES	20	18	16
Middle SES	57	56	56
High SES	23	26	28

APPENDIX C

Montgomery County Public Schools
Continuum of Special Education Services

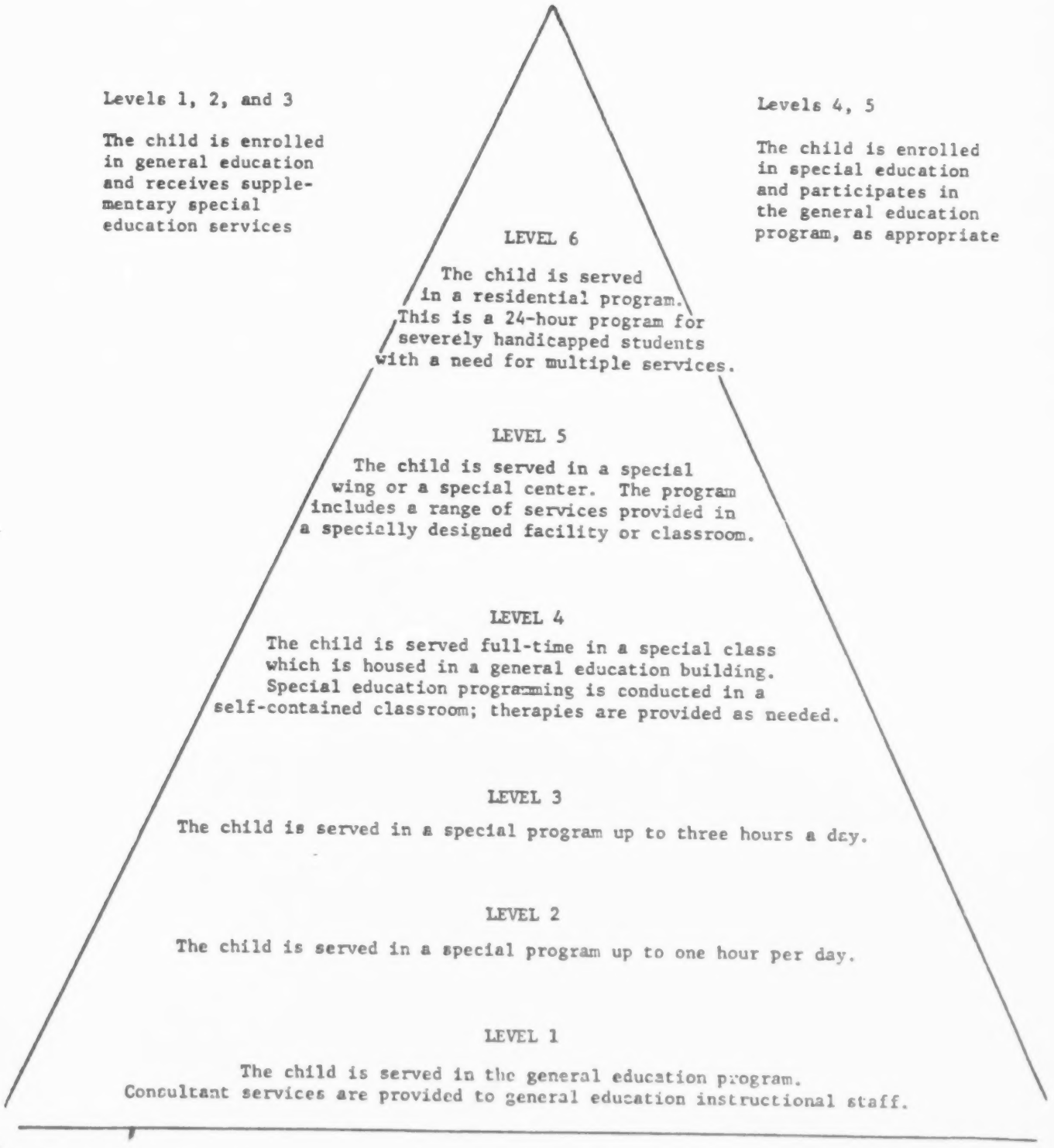
THE MCPS CONTINUUM*

Levels 1, 2, and 3

The child is enrolled in general education and receives supplementary special education services

Levels 4, 5

The child is enrolled in special education and participates in the general education program, as appropriate


LEVEL 6
The child is served in a residential program. This is a 24-hour program for severely handicapped students with a need for multiple services.
LEVEL 5
The child is served in a special wing or a special center. The program includes a range of services provided in a specially designed facility or classroom.
LEVEL 4
The child is served full-time in a special class which is housed in a general education building. Special education programming is conducted in a self-contained classroom; therapies are provided as needed.
LEVEL 3
The child is served in a special program up to three hours a day.
LEVEL 2
The child is served in a special program up to one hour per day.
LEVEL 1
The child is served in the general education program. Consultant services are provided to general education instructional staff.

*Based on Maryland State Department of Education Special Education COMAR 13A.05.01.

(Taken from: Office of Continuum Education, Montgomery County Public Schools, Access to Continuum Education Services, 1981, p. iii)

APPENDIX D

Montgomery County Public Schools
Level of Service Definitions

LEVEL OF SERVICE DEFINITIONS*

1 = Level 1: Assessment, consultation, and provision of special materials to regular classroom teachers. Level 1 is designed to assist the classroom teacher in developing and implementing an individualized education program for students in the general program who are able, with assistance, to remain in a regular class. Formal assessment of students who have been screened and are suspected to have a handicapping condition and monitoring are included as Level 1 services. (Frequency is less than 1 hour per week.)

2 = Level 2: Direct service to a student on an intermittent or regular basis. Level 2 is designed to provide supplementary instruction for students who require a degree of educational intervention not available in the general education classroom. Such instruction should not exceed an average of one hour per school day; this instruction may be given on an individual basis or in small groups. The special teacher also serves as a resource to the student's other teachers by suggesting activities to enhance the student's achievement. (Frequency is 1-4 hours per week).

3 = Level 3: Direct service to a student on a continuous basis for at least one hour a day. Level 3 is designed to provide supplementary instruction outside the regular classroom for students who require a degree of educational instruction not available in the general education classroom. Such instruction should not be less than one (1) hour and should not exceed an average of three (3) hours per school day, and is provided on a regular basis. The special teacher also serves as a resource to the student's other teachers by suggesting activities to enhance the student's achievement. (Frequency is 5-15 hours per week.)

4 = Level 4: Self-contained special education class within a general education facility. Level 4 is designed to provide a special class within a general education facility in which a student receives most or all of his/her basic education program. The student should participate in the general program as appropriate and have access to other supplementary services consistent with those provided to students in the general education program. (Frequency is 16-30 hours per week).

5 = Level 5: Special class placement for entire school day in a special school or special wing of a school. Level 5 provides comprehensive services including special materials, equipment, and related services. (Frequency varies according to program.)

6 = Level 6: Instruction provided on a short or long-term basis in a residential setting. Level 6 includes a comprehensive program, special materials and equipment, related services, and 24-hour personal care. (Frequency is usually 30 hours per week.)

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*Based on Maryland State Department of Education Special Education Bylaw 13A.05.01

7 = Level 7: Instruction provided in the student's home or hospital. Level 7 instruction is provided by teachers from the Home Instruction Unit, Alternative Centers or Multifacility Programs, but the service may be recommended by an EMT, an EMT using ARD procedures (SARD), an AARD, or a CARD.

Taken from Computerized Educational Data System: Manual of Instructions. Office of Special and Alternative Education, Child Find/CEDS/Early Childhood Handicapped Unit, Montgomery County Public Schools, Rockville, Maryland, 1983.

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APPENDIX E

Montgomery County Public Schools
Handicapping Condition Definitions

DEFINITIONS OF HANDICAPPING CONDITIONS*

MENTAL RETARDATION

Mental retardation is defined as significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period. The degree of retardation ranges from mild to profound.

Mild includes children and youth whose IQ may fall between two and three standard deviations below the mean on an individual test and whose adaptive behavior is not in accordance with standards of personal independence and social responsibility expected of children in their age and cultural group.

Moderate includes children and youth whose IQ may fall between three and four standard deviations below the mean on an individual test and whose behavior is not in accordance with standards of personal independence and social responsibility expected of children in their age and cultural group.

Severe includes children and youth whose IQ may fall between four and five standard deviations below the mean on an individual test and whose adaptive behavior is not in accordance with standards of personal independence and social responsibility expected of children in their age and cultural group.

Profound includes children and youth whose IQ level may fall more than five standard deviations below the mean on an individual test and whose adaptive behavior is not in accordance with standards of personal independence and social responsibility expected of children in their age and cultural group.

HEARING IMPAIRMENT

"Hard of hearing" means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance, but which is not included under the definition of "deaf."

Mild - a loss of 20-40 decibels.
Moderate - a loss of 40-70 decibels.

"Deaf" means a hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

Severe - a loss of 70-90 decibels.
Profound - a loss greater than 90 decibels.

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*Based on Maryland State Department of Education Special Education COMAR 13A.05.01.

SPEECH/LANGUAGE IMPAIRMENT

Speech impairment is defined as a communication disorder, such as impairments in articulation, language, voice, or fluency.

Articulation disorder--The abnormal production of one or more sounds which interferes with the intelligibility of speech.

Fluency disorder--The abnormal flow of verbal expression, including rate and rhythm. The disruptions in the normal flow of verbal expression occur frequently or are markedly noticeable and are not readily controllable.

Language disorder--Defined as a disability in verbal behaviors resulting from markedly impaired ability to acquire, comprehend, or use spoken or written language. The term does not include students whose primary disabling condition is due to a significant degree of sensory loss, physical disability, motor impairment, mental retardation, emotional impairment, or environmental disadvantage.

Voice disorder--The abnormal production of voice, characterized by defective vocal quality, pitch, and/or loudness.

VISUAL IMPAIRMENT

Visual impairment is defined as a limitation in vision which, even with correction, adversely affects a pupil's educational performance. Such limitations are manifested by partial sightedness, monocular vision, or legal blindness.

Monocular/Reduced Acuity--vision in one eye with 20/50 or less in the eye.

Educationally Blind --totally blind through light projection perception. Requiring braille.

Partially Sighted--20/70 acuity or less in the eye with the best corrected distance vision or restricted visual field subtending in arc not exceeding 20°.

Legally Blind--20/200 acuity or less in the eye with best corrected distance vision.

Other Health Problems Affecting Vision--includes any students not addressed above but who have a a health impairment such as progressive eye condition (e.g., diabetic retinopathy) which affects vision and requires that the students receive vision service.

EMOTIONAL IMPAIRMENT

Emotional impairment is defined as behaviors which have developmental deviation in emotional functioning and which interfere directly with learning over a long period of time and to a marked degree. It is an inability to learn which cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behavior or feelings under normal circumstances; a general pervasive mood of unhappiness or depression; a tendency to develop physical symptoms or fears associated with personal or school problems. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

SPECIFIC LEARNING DISABILITY

A specific learning disability is defined as low achievement in relation to the student's age and ability levels. It is indicated when a severe discrepancy between achievement and intellectual ability is identified in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematics calculation, or mathematics reasoning. The term does not encompass the pupil whose primary disability is the result of visual impairment, hearing impairment, physical disabilities, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantage.

ORTHOPEDIC IMPAIRMENT

Orthopedically impaired is defined as a severe orthopedic impairment, neuromuscular or medically restricting condition which adversely affects a student's educational performance. The term indicates impairments caused by congenital anomaly (e.g., clubfoot, absence of some member, etc.), impairments caused by disease (e.g., poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns which cause contractures). Temporary or permanent special education provisions and/or habilitation or rehabilitation may be required.

OTHER HEALTH IMPAIRMENT

"Other health impaired" means limited strength, vitality, or alertness due to chronic or acute health problems (such as heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes) which adversely affect a child's educational performance.

DEAF-BLIND

Deaf-blind is defined as concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind students.

MULTIHANDICAPPED

Multihandicapped is defined as concomitant impairments, the combination of which causes such severe educational problems that they cannot be accommodated in special education programs designed solely for one of the impairments. It includes, but is not limited to, such combinations as mentally retarded-orthopedically handicapped, learning disabled-emotionally impaired, and visually impaired-speech impaired. The term does not include deaf-blind.

CHILD IN NEED OF ASSESSMENT/DIAGNOSTIC

This classification can be used for new students referred for assessment in either MCPS or a private/parochial school. This includes students who have not previously been identified as handicapped and who will be further assessed with parent permission by a speech and language pathologist, a resource teacher, a psychologist, etc.

Taken from Computerized Educational Data System: Manual of Instructions. Office of Special and Alternative Education, Child Find/CEDS/Early Childhood Handicapped Unit, Montgomery County Public Schools, Rockville, Maryland, 1983.

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